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THE PROBLEM OF PREVENTIVE MEDICINE

IN PRACTICE AND IN MEDICAL EDUCATION

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The rapidly developing appreciation of the importance of preventive medicine by the general public and by the medical profession has brought home to the medical school the problem of teaching "disease prevention" in its broadest sense. It is my hope to summarize the influences of some of the more important agencies that have led up to the popular demand for preventive measures in medical practice, and to point out a way in which the average medical school, not associated with a school of public health, may prepare the prospective medical graduate to meet the situation. The material is discussed under two general headings: (1) influences that are developing an ever increasing demand for disease prevention in the practice of medicine, and (2) preventive medicine in the medical curriculum.

INFLUENCES DEVELOPING AN EVER INCREASING DEMAND FOR DISEASE PREVENTION IN PRACTICE OF MEDICINE

Preventive medicine is commonly defined as the medicine of the community, and contrasted with curative medicine or medicine affecting the individual. This interpretation was more appropriate before the importance of personal hygiene as a protective measure was fully appreciated and before the use of protective biologic products had become practical, than it is at present. While the right of the community to be protected from disease, whenever protection is possible, is gaining more and more recognition each year, the more modern interpretation is to consider the individual the unit of protection and to develop methods of disease prevention which can be applied for the protection of the individual, the group and the community. The term "health promotion" has already been suggested as a successor to that of "preventive medicine." Search for a term to take the place of "preventive medicine" seems rather premature, since preventive medicine, itself, is only just becoming established. The new term is quoted merely to show the present trend of thought, and to illustrate the popularity with which the movement in general has been received.

The practice of medicine has been changing for several years, and there has been a steadily increasing trend in the directions of prevention, and of earlier diagnosis and treatment. Many influences have combined to bring this about, among which may be mentioned the advance of medicine as a science, urbanization, political and legal influences, and the activities of semimedical and nonmedical health organizations.

First of all, let us establish the fact definitely that preventive medicine has been made possible only through the advances in medicine as a science. The "old style family physician," formerly the ideal example of medical practitioner who was family councilor and comforter as well as omnimedical adviser, is passing. Several most interesting articles have appeared which have emphasized his worth to the community, regretted his gradual disappearance, and suggested means of bringing him back; but he is the victim of human limitations, and in the "time honored" sense cannot "come back," because medical science has made it impossible. The "general practitioner" of today has more than taken his place medically and scientifically, but his absence is still sorely felt by the public because the selfsame science that has made possible a more accurate diagnosis and given more complete knowledge of prognosis will not permit the general practitioner honestly to hold out to the dangerously sick patient and to his friends the hope and the encouragement that was the primary psychologic factor in the success of the older type of family physician. Medical science has become too technically comprehensive and too specialized to be mastered by a single mind. Specialties are necessary, and will become more so and more varied as time goes on; and, with each new attainment in treatment, new means of prevention will become apparent and be brought into practice.

The discovery of the bacterial cause of many diseases, the uncovering of the great principles of immunology with their bearing on the course and termination of diseases, the disclosure of the constant organ and tissue changes affected by certain specific causes, the conception of measuring the changes in function wrought by disease with the use of the acquired information for more accurate diagnosis, the advent of the roentgen ray, the development of highly technical knowledge along special lines and the revelation that some diseases can be prevented more readily than they can be cured are the scientific bases for preventive medicine.

The growth of cities and the migration of the general population to them have made preventive measures imperative. The close physical contact of great numbers of persons has made it necessary to control water, food and milk supplies, to institute proper sanitation and drainage, and to appoint departments to enforce quarantine and similar measures. Medical men have always been and still are the leaders in the establishment of these measures. Hospitals and laboratories which have played a great part in the control of disease

are outgrowths of the common needs of the physician and the city. Urbanization has made hygiene, public health, sanitation and preventive medicine necessary specialties.

The greatest single factor in precipitating the present day activities in preventive medicine was probably that of the war. It showed indisputably that health measures summarily enforced would decrease, if not entirely control, many diseases that had formerly been among the most destructive agencies of war. The successes of vaccine prophylaxis for typhoid, dysentery, cholera and smallpox were emphasized; the value of prophylaxis against tetanus was realized as never before; the efficacy of venereal prophylaxis and the importance of general health and sanitary measures were demonstrated beyond all possibility of doubt. Educational measures in the army received a great deal of attention, and have borne so much fruit that most of the former "dough boys" have a fair basis for estimating the competence of the home doctor. At home, the war gave a great impetus to industrial medicine. The value of having the able man on the job was appreciated broadly for the first time. Hundreds of thousands of physical examinations made by local boards and medical advisory boards demonstrated the presence of thousands of unsuspected lesions in apparently healthy persons. Since the war, the United States Public Health Service, the various state, and municipal health departments have been attempting to apply the lessons of the war to civil life. Health institutes have been held in various cities. Circular letters of instruction on modern methods of prophylaxis and treatment have been sent to physicians, and their cooperation in health education has been invoked.

Various other agencies are engaged in teaching the public, or, more accurately, the "public's children" modern health measures. The public school and the health nurse are now being used extensively for this purpose. The difficulty for the physician is that the required knowledge is relative. For instance, the public is given a superficial smattering about a given health procedure, just enough to appreciate its value and feel its necessity. The public health nurse is given a very general idea of the involved principles, and is supplied with a technical training covering in minute detail the steps in the application of the procedure. The physician is expected to know the "whys and wherefores," the scientific principles, the method of application and the limitations; in short, the science as well as the art of the procedure. Infinitely more is required of him; and, if he is unprepared, the public and the health nurse are likely to assume his deficiency in the matter as an index of his general ability. There have been many instances wherein the physician has appeared at a disadvantage because he has been deterred from his apparent duty by his more complete knowledge, and has received undeserved censure from well meaning persons possessed merely of popular information.

The health nurse is essentially a field worker in preventive medicine. The work is comparatively new, the limitations of the field are not yet sharply drawn, and there is often friction with the physician where there should be cooperation. Physicians are inclined to feel that health nurses are going beyond the limitations of their training. They are too familiar with the training of nurses in general to appraise the health nurse at her actual value. They feel that the tendency on the part of nurses to prescribe drugs is dangerous and that the procedure is illegal, and they are not inclined to tolerate it, or to pardon the offender. On the one hand, the physician must realize that the health nurse cannot adapt herself to too many strange conditions at once; that she is here and here to stay; that the state and the public have accepted her and are providing for her, and that she is willing and anxious to do the right thing and to accept intelligent guidance. If the physician is not prepared to furnish that kind of guidance, he must take steps to acquire the training necessary for it. Otherwise he is open to the criticism that he will get. Nurses, on the other hand, must realize that they can gain little in cooperation by public defiance of a physician with whom they are forced to work.

Life insurance companies have done much to bring preventive medicine into the foreground. They began by accumulating great masses of statistics showing the influence of various diseases on the length of life. The Metropolitan Life Insurance Company of New York has been active in many ways, and has published much health propaganda. The company has tried out preventive medicine on a large scale with its own employees. The company gives the employee a physical examination annually, insures his family against destitution in case of his lost earning capacity, takes care of him when he becomes sick, and saves his job for him in case he recovers and is again able to resume work. Others have not been slow to take advantage of the physical examination, and we have had developed life-extension bureaus, health centers and the like.

Medical dispensaries, too, are constantly increasing both in number and in patronage, and they are being used as centers for teaching preventive measures. In 1921,[1] it is known, there were 3,243 dispensaries operating in the United States. It is estimated that there were in addition about 4,000 dispensaries connected with the various industries, totaling at least 7,243 dispensaries. In the known dispensaries, 3,872,345 patients were admitted for a total of 11,798,887 visits. Estimated on the same basis, the total number of patients received in the 7,243 dispensaries would mean that about 8,000,000 patients made 29,500,000 visits to dispensaries during the year. The total population of the United States is a little over 100,000,000, so that approximately one twelfth of the entire population was treated in clinics during the year. It is not possible to estimate the exact percentage of persons who require medical attention each year, so that the relative number left to the practitioner cannot be determined. The number making use of dispensaries showed a great increase over any preceding year, and the development of many new clinics of a special nature led to a steady increase in their use. Special clinics for mental hygiene, child hygiene and venereal disease were opened (119 of the latter by the United States Public Health Service). Perhaps the most interesting experiment of the year was the institution of the Cornell Pay Clinic [2] in November, 1921. This clinic admits no free patients, but maintains an elaborate set of eligibility rules for pay patients, based on the annual income compared to the size of the family and the cost of the medical service. A fee of $1 is charged on admission, and an additional dollar is collected at each subsequent visit. During the first five months, 18,803 patients were admitted, and a total of 43,899 visits were received. From the standpoint of the clinic, it appears to be a success. However, it is obviously not fair to admit a

1. Dispensary Service in the United States: First Presentation of Dispensary Data by the Council on Medical Education and Hospitals of the American Medical Association, J. A. M. A. 79: 464 (Aug. 5) 1922.

2. Typewritten Report, issued by the Cornell Clinic, June 1, 1922.

person having three in his family who earns $2,500 a year, and to exclude one in similar circumstances who earns only $2,600, so that the scope of the clinic will necessarily be increased from time to time, and no one can say where the practice may end. A different kind of dispensary has been in use for several years at the Massachusetts General Hospital. It is conducted for diagnosis only, and offers the services of a group of specialists and the advantage of thorough laboratory tests at very reasonable rates. It accepts no patients except those referred to it by a physician, and returns the patient to his own physician for treatment. It is known as a consultation clinic. The success of a dispensary depends principally on the grade of work it is able to do, and this, in turn, depends on its medical personnel. The practitioner who is not connected with a dispensary may or may not have to compete with one in a commercial way, but he does have to compete, on the basis of service rendered. If the dispensary has health education as one of its main objectives, the practitioner, too, must be prepared to give reliable information on disease prevention to his private patients.

Poverty and disease have always been closely akin. Poor food, bad housing, crowding and insufficient ventilation permit many diseases to spread more rapidly among the poor than among the well-to-do. Charitable organizations formed to handle social economic problems, as well as lay organizations caring for the sick and disabled of war and in other great emergencies, have been quick to see the advantages of preventive measures and to insist on their practice. The activities of the American Red Cross, the National Association for the Prevention of Tuberculosis, the Association for the Promotion of Child Welfare, the National Organization for Public Health Nursing and several others are too well known to need detailed discussion here. A great deal of credit is due them for their accomplishments. During the war and since that time there have appeared so many organizations having closely allied interests, and there has been so much competition among them, that many instances of confusion of purpose and conflict of fields have occurred. One might easily believe from the communications contained in the daily mail that membership in some organization to reform, promote, prohibit or educate is one of the ruling human passions. Cooperation between the older and more established associations and the physician has been good and mutually beneficial; but the average physician realizes that it is impossible to fulfil all requests made of him, and that he must either discriminate between them or discard them all.

Health officers frequently complain that practitioners are careless in complying with health department requests and mandates, and have attempted at times to force physicians to carry out their provisions through the use of police powers and by public criticism. Public criticism will not solve the problem, because it antagonizes the offender, misleads the public, and commits an injustice on the great majority of the profession.

Of interest in this connection was a discussion that took place at the 1922 annual meeting of the American Public Health Association in Cleveland, where the uninitiated were led to infer that the ordinary physician, not in public health, is ignorant, nonprogressive, noncooperative, short-sighted and generally antagonistic to all preventive measures. The chairman [3] in his opening address took the attitude that the physician antagonizes public health activities on commercial grounds, and that he, therefore, is short-sighted, since it is good business to prevent contagious diseases. According to this theory, the physician, instead of being called in to make two or three visits and sign a death certificate, saves the patient for the chronic diseases of elderly life, when many visits will result. If it were true that the physician is a wholly commercial person, and my experience indicates that usually quite the reverse is the case, the argument is a poor one because the business of saving the child to profiteer on the aged would put off dividends until the next generation of physicians. A point worthy of much more careful consideration made in the same address was the observation that when one physician is the recipient of a case referred by another, it is customary to drop a courteous note of thanks, but that when a school physician sends a note to a child's parents calling attention to an obvious ailment of the child with instructions to "see the family physician," the latter generally tears up the note and attempts to prove that the school physician was mistaken. Among other speakers who discussed the paper, the remarks of Dr. Martin seem particularly pertinent. He pointed out that the medical profession could be divided into three groups: an upper third, made up of leaders of the profession—high minded men devoted to research, to close observation and to progress; a middle third, of strong, clear sighted, intelligent men who follow the leads of the upper third, and who form the bulwark of the profession; and a lower third, of self centered, poorly trained, nonprogressive individuals who form an antagonistic group and whose antagonism one must have as an index that he is in the right.

At a session of the Child Hygiene Division, a group composed largely of nurses and welfare workers, a New Jersey state official [4] presented an immense amount of statistical evidence to prove that the death rate was less when obstetrics was done by midwives than when carried out by physicians. Without questioning the total figures, one would like to know how many of the infant and maternal deaths were due to puerperal infection or to poor obstetric technic, and how many to preexisting pathologic conditions and to concurrent diseases. It is a well recognized fact that pathologic pregnancies find their way to physicians, while the midwife's practice comes largely from the healthy women among the foreign element and hence are normal deliveries. It may be well to point out here that medically trained followers of men like Holmes and Semmelweis had reduced the obstetric death rate due to puerperal sepsis from about 10 per cent. prior to 1847 to less than 1 per cent. before infant welfare organizations as such had been thought of, and that the relatively less pronounced improvement since that time has been due to the strictest application of scientific medical knowledge. Under the circumstances, it scarcely seems just to infer that the discrepancy on the side of the physician is due to poor obstetric preparation and to carelessness, although that interpretation was made, and this before a group which has shown itself prone to become hypercritical on all possible occasions. The foregoing discussions are cited in the spirit of arousing the practitioner to eliminate any just causes for complaint which health officials may have, and not with the intention of increasing antagonism.

3. Discussion of John Dill Robertson's paper, "Challenge to the General Practitioner," read before Administration Section of American Public Health Association, Cleveland, Oct. 16, 1922. Paper published without discussion, Am. J. Pub. Health **13**: 1 (Jan.) 1923.

4. Levy, Julius: Maternal Mortality and Mortality in the First Month of Life in Relation to Attendant at Birth, Am. J. Pub. Health **13**: 88 (Feb.) 1923.

One of the resolutions of the meeting was based on the opinion that the physician generally is not keeping up with preventive medicine. It was pointed out that this was in part due to his medical school training, which is unbalanced in favor of treatment as weighed against prevention, and that *"it is essential that medical schools change their ideals of education before the general profession can be changed in its relation to the public."* The resolution was to the effect that a committee be appointed to suggest an outline of proper courses in public health and preventive medicine for undergraduate medical students and to confer with the Curriculum Committee of the Association of American Medical Colleges and with the various state medical licensing boards.

Numerous other influences might be discussed, for there are many "anti" societies which have appealed to law to have their ideas enforced, and many political and socialistic influences advocating health insurance and the like. There is the whole subject of industrial medicine, most of which is preventive in character; but I think I have cited a sufficient number of facts to emphasize the need of concerted action on the part of the medical profession in regard to a serious consideration of the part that the public expects it as a profession to play in the development of public health and preventive medicine. The statement has been made that health measures are directed toward "state medicine." Under lay leadership, "state medicine" may be brought about, but under medical leadership it is very unlikely. "State medicine" is to be avoided because it will impede medical progress. As medical progress is responsible for preventive medicine, the public should be given to understand that in advocating "state medicine" it is "killing the goose that laid the golden egg."

Under proper leadership and with the unhampered cooperation of the best medical minds, preventive medicine offers one of the greatest boons that civilization has yet known.

PREVENTIVE MEDICINE IN THE MEDICAL CURRICULUM

The problem of establishing satisfactory working relations between agents of the various health interests and medical practitioners already in the field is beyond the medical school; the function of preparing the future physician to fit in with the work is very definitely a part of its duty. Pritchett [5] has said, "The medical profession is rooted in medical education and will not rise higher than the soil in which it grows." The duty of the medical school is clear: it should establish adequate courses at once, and not wait to have them forced upon it. In Pennsylvania, steps have already been taken to include a group of questions in public health and preventive medicine among examinations for medical license. One set of "possible questions" has already been distributed by the board, and I am told that a second, much more comprehensive one is in preparation.

Medical instruction in public health may be directed toward any one of several objectives and, therefore, must vary accordingly. If it is the aim to prepare men for a public health career, the problem is a very different one from the instruction of medical men to practice preventive medicine as a part of their general work. If postgraduate work is under consideration, it must first be determined whether a complete course leading to a degree is to be undertaken, or whether a short course planned to bring practitioners up to date in health measures is the object.

If the idea is to prepare medical health officers, measures for establishing a school of public health must be taken; several such schools have already been founded. These require a five year course for the combined degree of M.D. and Dr.P.H. (Doctor of Public Health). They offer postgraduate courses for medical men leading to the degree of Dr.P.H., and a four year course for health officers, leading simply to the degree of B.P.H. The courses of study given at such schools include bacteriology, hygiene, entomology, sanitary chemistry, sanitary engineering, industrial toxicology, industrial physiology, dietetics, sanitary surveys, epidemiology, vital statistics, health laws and legislation, public health administration, industrial hygiene, child hygiene, mental hygiene, public school medicine, health education and physical education. In order to compete with the schools already established, a large faculty consisting of many experts will be required. At a meeting held in Washington in March, 1922, the education of the "Health Officer of the Future" was discussed at great length. It came out in the discussion that there is no immediate need for more schools of public health because the salary available for health officers at the present time is insufficient to encourage many students to undertake the complete courses.

The problem under discussion does not deal with public health schools, or at present with postgraduate courses, but with the undergraduate instruction of the student in the medical school. We must first decide what parts of a general public health education are essential to good medical practice and consistent with the teaching facilities of the school; we must find a suitable amount of time and a place for the course in the curriculum; we must arrange for a certain amount of expert instruction in some of the more highly specialized subdivisions, and we must adopt some means of keeping the "preventive idea" constantly before the student.

Precedent for the amount of ground to be covered is naturally found in the curriculums of schools that are giving adequate courses in preventive medicine. There is considerable difference of opinion, however, about the amount of time that should be devoted to teaching health habits, conduction of health examinations for incipient disease, etc. Only a few days ago a physician asked, "What is the use of teaching health habits, when nobody can be made to change his habits, and everybody does just what he pleases, anyway?" Many medical men feel the same way, and a word on the subject may not be amiss.

Education in health habits has been most successful in teaching the children to form good health habits instead of bad ones. A man's willingness to adopt and acquire health habits undoubtedly depends on how much he has come to be dependent on unhealthy habits, how much self denial he must exert, how difficult of execution the health measure is, and just how badly he dreads the disease he hopes to prevent. One would not expect success in teaching abstinence to a chronic drunkard, but one does have success in teaching dietetic temperance to the average chronic nephritis patient with high blood pressure. Inability to educate men out of promiscuous venereal habits is the only excuse for venereal prophylaxis. Prophylaxis is admittedly a much less efficient preventive measure than continence, but it has actually accomplished a great deal when an attempt to enforce continence would have failed com-

5. Pritchett, H. S.: Relation of Medical Education to Medical Progress, New York M. J. **115**:1 (Jan. 4) 1922.

pletely. Medical men are often inclined to feel a little ahead of dentists, but there are few better examples of preventive medicine than that of dental prophylaxis. The ease with which the public has been taught to consult the dentist for prophylaxis once or twice a year is remarkable. A short time ago I asked a successful dentist how much dental prophylaxis has decreased his practice; he replied that it had not decreased it, but had actually increased it and made his work much more pleasant. He stated that now he saw pyorrhea and dental caries in the early stages, and almost never saw the "rotten mouths" that were so common in his practice a few years ago. The time is not far away when routine health examinations will be as common as dental prophylaxis is today. There may be a tendency for routinization in dispensary work, but when a physician has one of the families of his own clientele educated up to annual health examinations he will be as careful as possible in every step of his examination; his success will depend on it.

The Time and Place for Hygiene and Preventive Medicine in the Curriculum.—The report of the Curriculum Committee at the thirty-second annual meeting of the Association of American Medical Colleges in 1922 advised the increase in the number of hours allotted to hygiene and preventive medicine from fifty-four to 170. The prospect of the addition of approximately 100 more hours for this purpose raises the question of an available source for that time. The clinical branches are anxious to increase rather than decrease the amount of time assigned to them so that they may be left out of the consideration. The suggestion has been made that the time be taken from the laboratory courses. There are strong arguments against any further reductions in bacteriology, immunology and pathology. In the opening lecture in bacteriology and pathology this year I tried to bring before the students a conception of the practical benefits to be derived from the long grind through the laboratory subjects. The point was first made that the student often gets impatient because he does not see the connection between the work and clinical medicine. It was pointed out to him not only that he was benefited by gaining an intimate knowledge of the causes, processes and morbid changes of disease and the recuperating powers of the tissues, but also that he was acquiring, by application, the habits of observation and analysis, familiarizing himself with the great principles of research, and most of all gaining unshakable confidence in the correctness of his knowledge. For example, the student who has had the experience of watching the development of tuberculosis in an animal following inoculation is not easily influenced by statements coming from disciples of cults which assert that tuberculosis is a "state of mind" and that the tubercle bacillus is a "myth," while to the man who has not had the training the statement may not seem so unreasonable. Rather than rob any of the present courses of their allotted time, I think it would be better to encroach further on the students' vacant time. For several years educational committees generally have been urgently demanding that medical schools decrease the number of hours required of students so that they may have time to think for themselves. As a rest and relaxation measure, the idea may be a good one, though its value as a means of developing the average student's intellect is questionable. In a recent communication, Dr. James Ewing expressed my feeling in the matter much better than I have been able to do. He said: "Personally, I am not in favor of reducing the medical curriculum and allowing the students more time to think for themselves. I am much more concerned that they should have something proper about which to think."

Not only additional time, but also a suitable place for the course must be found. Hygiene and preventive medicine are very intimately associated, though they are not inseparable. Perhaps the most practical plan would provide for teaching hygiene in the sophomore year, and for giving preventive medicine proper in one of the last two years. During the second year the student's attention is focused on laboratory subjects: Bacteriology, and the preparation of vaccines and of other protective biologic products are fresh in his mind, and he has acquired an excellent foundation for knowledge of what constitutes good food, water, etc. He has had little or no clinical work up to that time, and hygiene furnishes added interest as a practical application of his scientific training. On the other hand, the best results in teaching the control of infectious diseases can be had only in the later years after the student has had clinical experience with such diseases and can appreciate the value of preventing them. In the University of Pittsburgh we are planning to give didactic and laboratory instruction in hygiene in the second year, and a lecture course in preventive medicine in the third year. In the course in hygiene, the influences on health and disease of food, water, air, soil and sewage disposal should be considered together with the preparation of protective biologic products, detection of carriers, the rôle of insects in the spread of disease, vital statistics, etc. The instruction in preventive medicine should be far more comprehensive. A centralized course should first be mapped out to include vaccine prophylaxis, control of carriers, the relation of the practitioner to the local health administration, effects of heredity, eugenics, and brief discussions of industrial hygiene, mental hygiene, health education, child welfare movements, etc. Secondly, arrangements should be made with the other departments to devote some time within their own courses to a discussion of preventive methods useful in their own subjects and which are too specialized or too technical for general discussion in the centralized course. Finally, the cooperation of the entire faculty should be obtained in keeping the "preventive idea" constantly before the student.

The latter plan was suggested by a statement made by Dodson,[6] who said: "Larger emphasis should be placed on prevention by every department in the school. When the instructor demonstrates typhoid, he should ask, 'Why did this patient get typhoid?' If the whole clinical curriculum presented subjects from the side of prevention, as well as from cure, much could be accomplished in a short time."

Acting on this suggestion, the Department of Hygiene of the University of Pittsburgh has solicited the help of every teacher in every department in the school in teaching preventive medicine. Some departments have greater opportunities for emphasizing prophylaxis than others. The department of medicine has perhaps the widest range of subjects. With every acute infectious disease, the means of spread should be discussed, the kinds and relative amounts of immunity afforded should be emphasized, and the means of controlling the spread to other persons mentioned. Much

6. Dodson, J. M.: Discussion of a paper at conference on the Education of the Future Health Officer, Washington, March, 1922.

of this is repetition, but it serves to fix the facts in the students' minds. Then there are the more technical subjects which fall under specialized instruction in medicine. For example, the discussion of prophylactic heart clinics, the technic for health examinations as well as those made purely for diagnostic purposes, and the hygiene of diet in some of the diseases of altered metabolism. A man said recently that he had known graduates of some of the best medical schools who could discuss metabolism very scientifically, but he had yet to find a single one who, without additional instruction, could make out an efficient economic diet for a poor family.

An excellent example of the complete plan for cooperative instruction in prevention is furnished by the subject of mental hygiene. The term is something of a scarehead, though the teaching can be carried out well in all three phases. One phase is that which the student would get in the centralized course in preventive medicine and which would include the effects on the mind of heredity, alcohol, other poisons, syphilis, emigration, etc., and a discussion of what various agencies are doing to improve conditions among mental risks. Another phase, the technical one, should be handled by the department of neurology because they are better prepared to teach it than any one else. In this division the student should be taught the forms of insanity in which preventive measures have had some success, the care of the insane, methods for making asylums more habitable, something about the influence of occupation on the insane mind, the effects of hydrotherapy, etc., and perhaps more important than many other things, what steps should be taken in the disposition and care of an obviously insane person who is at liberty in the community. The third phase, that of placing the sick or injured persons at rest and the importance of so doing, belongs in every field of medicine and surgery. *Students should be taught not to ignore anything which offers an opportunity of making the patient more comfortable.*

Dershimer [7] recently mentioned an instructive case in point: A very nervous woman, between 35 and 40 years of age, developed sudden abdominal pains and made her own diagnosis of stone in the kidney. Morphin and atropin in fair doses failed to lessen the pain, and there was no sediment or albumin, and no blood in the urine. Careful history elicited the fact that she had helped to take care of a patient with stone in the ureter a short time before. Further examination demonstrated that the symptoms of stone were limited to those which the patient had observed in the other case. The patient asked that a chiropractor be called, because her mother had been helped by one. She said that the chiropractor had made a sudden and very forcible pressure at a point on the abdomen, which she indicated. Dr. Dershimer replied that he could accomplish a similar cure by the same means, which he proceeded to do, and the pain stopped at once. After a few days the patient was carefully informed of the imaginary nature of her pains, and up to the time of the report had had no further attacks. Dershimer further reported that formerly his company had paid out more compensation for back injuries than for any other kind of accident, and that for several years past they had been paying special attention to all types of back injuries. The slightest injury is roentgenographed at once, the patient is sent home in the company's car and placed at rest, and is instructed to report for reexamination next day if he feels like it, and to call the company physician if he does not. As a result, compensation for back injuries has been limited to the severe and unquestionable ones.

The instructor should find a lesson in such examples and never fail to impress on a student the necessity of going into the mental side of every case and of allaying suspicion and uneasiness in the patient's mind. When he does so he is teaching mental hygiene. Christian science, chiropractic, practical psychology and the like owe much of their success to the carelessness of the average physician and to his overlooking the mental side of his patient.

It is not necessary to go into many further examples, though I should like to mention some possibilities; for example, venereal disease prevention should be discussed during the courses in gynecology, obstetrics, skin diseases and genito-urinary surgery; prevention of blindness, in ophthalmology and obstetrics; child welfare work, in obstetrics and pediatrics; cancer prevention, in medicine, surgery, gynecology and the specialties; fatigue, in physiology; dietetics, in metabolism and medicine; prevention of general infection, tetanus, anthrax, etc., in surgery, and so on indefinitely.

It is well recognized that these matters are receiving consideration at present, and I do not mean to insinuate that they are not. I do mean that still more emphasis should be placed on them, and that the instruction should be more pointed, namely, that both the instructor and the student should be conscious, at the time, that preventive medicine is being discussed. No matter what the department, the point should be made that the specific measure is a preventive one. The teaching courses in all departments should be reviewed thoroughly, with the object of stressing successful preventive methods for the benefit of the students.

The teaching should be carried out with a view to informing the student of the best preventive measures available, and should be directed toward preparing him for leadership in progressive health movements. If the public is convinced that the physician and student are doing everything within their power to decrease sickness and prolong life, there is no danger that it will not continue to extend to them the protection and support they have always enjoyed.

7. Dershimer, F. W.: Practical Mental Hygiene in Industry, read before Industrial Hygiene Section, American Public Health Association, Cleveland, Oct. 17, 1922.

Creosote Oil as a Mosquito Repellent.—In a study of rural malaria in Yazoo County, Miss., by the U. S. Public Health Service, a marked difference in the number of anopheline mosquitoes found under railroad bridges and the number found under county road bridges, only a few yards away, was noted. Investigation disclosed that the railroad bridge timbers had been treated with creosote oil before being used whereas the county bridge timbers had not been so treated, and that by actual count the number of mosquitoes resting under the former was very small in comparison to the number resting under the county bridges. To continue the observation, a series of twenty-five houses in different sections of the county was selected, and an application of creosote oil to the rooms—one gallon to 420 square feet—was made. These experiments indicated that creosote oil is a noticeable repellent of anopheline mosquitoes, and that it was still effective ten weeks after application. The total duration of its effectiveness is still to be determined. Coogle (*Pub. Health Rep.*, March 9, 1923), who conducted the investigation, concludes that creosote oil as a mosquito repellent is particularly applicable to and desirable for use in houses of poor construction where screening and other antimosquito measures cannot be effectively employed.

THE MORTALITY RATE FOLLOWING OPERATIONS ON THE THYROID GLAND *

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The diseases of the thyroid, such as exophthalmic goiter, and adenomatous goiter with hyperthyroidism have lost their former place among serious and fatal surgical ailments. The present great reduction in surgical mortality demonstrates the benefit of medical and surgical team work in the diagnosis and classification of thyroid diseases. Medical treatment is curative or beneficial in certain forms of goiter. In types of the disease formerly so fatal if untreated, and also having a high mortality surgically, improvement may be obtained by proper care. The actual dangers from avoidable surgical accidents and complications are now better recognized. This is all the result of the greater attention, both medical and surgical, paid to diseases of the thyroid. Any discussion or argument, any fad, medical or surgical, which will lead to more care, will lower mortality, as a by-product, so to speak, and therefore is justified by the results.

In order properly to evaluate the significance of the surgical mortality statistics following operations for disease of the thyroid gland, many considerations must be borne in mind, the foremost of which are the method of classification of the various thyroid diseases, and the care and accuracy with which individual cases are diagnosed and assigned to such classification. The general custom of grouping all diseases of the thyroid together, and of determining the mortality rate on such a basis is more or less valueless, and it is even worse to base the rate on the total number of operations. Failure to describe the method of computation is misleading, and results in erroneous conclusions. For example, during the past year, 1,983 operations were performed on the thyroid gland at the Mayo Clinic, with only nineteen "surgical deaths," a mortality rate of 0.96 per cent. Such data, however, as will be seen from the following discussion, not only fail to reveal the real truth, but conceal facts which, when brought out, prove to be of great value.

The clinical classification of thyroid disease used in the present report is that developed by Plummer, in which the structural, functional and etiologic characteristics are correlated on fundamental grounds into nine distinct diseases: (1) diffuse colloid goiter, (2) adenomatous goiter without hyperthyroidism, (3) adenomatous goiter with hyperthyroidism, (4) exophthalmic goiter, (5) myxedema, (6) cretinism, (7) myxedema of childhood, (8) thyroiditis and (9) malignancy.

Of the foregoing types of disease, only the first four need be considered from the point of view of mortality, because at least 99 per cent. of all operations on the thyroid gland are performed on patients who have one of these four diseases. Since in the series there were relatively few cases of thyroiditis and malignancy, and since no deaths occurred in these cases, they will not be considered in this discussion. Myxedema and cretinism are, of course, nonsurgical conditions.

The accuracy of the assignment of each case to its correct classification before operation is aided by the determination of the basal metabolic rate, and is verified after operation by pathologic examination of the thyroid tissue removed. Accepting the pathologic examination as correct, the clinical diagnosis has been found to be in agreement therewith in approximately 94 per cent. of the cases.

DIFFUSE COLLOID GOITER

A diffuse symmetric enlargement of the thyroid gland, characterized pathologically by an excess of colloid in the acini and unassociated with symptoms of hyperthyroidism, is designated clinically as "diffuse colloid goiter." Except in very rare instances of extreme enlargement it is not a surgical condition; interest in it, surgically, lies in the fact that two errors of diagnosis are often committed. First and most important is an erroneous diagnosis of mild exophthalmic goiter in a young person in whom a colloid goiter is accidentally and independently associated with psychoneurosis, effort syndrome, or disordered action of the heart. That the condition of these patients may often be diagnosed as mild exophthalmic goiter is borne out by the fact that many reports on the pathology of exophthalmic goiter emphasize the finding of a diffuse colloid deposit without diffuse parenchymatous hypertrophy. Most of these errors can be eliminated by the accurate determination of the basal metabolic rate which, in this group, is normal, or below normal, while in exophthalmic goiter the metabolism is distinctly elevated. It is evident that in proportion to the inclusion of cases of nonhyperthyroid, or simple goiter, in the classification of exophthalmic goiter, the mortality of that disease will be apparently decreased. This point has been emphasized, not because it is of academic interest, but because the number of such cases that are erroneously diagnosed as exophthalmic goiter is large. Not one patient with diffuse colloid goiter and a normal basal metabolic rate was operated on at the Mayo Clinic during the past year. Another common mistake is to designate a large colloid adenomatous goiter simply as colloid goiter, thus confusing a disease which is often surgical with a disease that is but rarely surgical.

ADENOMATOUS GOITER WITHOUT HYPERTHYROIDISM

An adenoma, or an adenomatous enlargement of the thyroid gland which is not causing constitutional symptoms and is not altering the concentration or character of thyroxin in the body, is classified as "adenomatous goiter without hyperthyroidism." This group includes those cases of colloid adenomatous enlargement already referred to as being often erroneously designated as colloid goiters. Large numbers of cases of adenomatous goiter pass through the Mayo Clinic each year for which operation is unnecessary, and these patients are not, therefore, operated on. One patient with adenomatous goiter without hyperthyroidism, but with respiratory obstruction, who had had a tracheotomy before coming to the clinic, died from associated status lymphaticus before thyroidectomy could be performed. During 1922, thyroidectomy was performed on 663 patients with adenomatous goiter without hyperthyroidism with only one postoperative death, making a surgical mortality by case of 0.15 per cent.

Deaths in nonhyperthyroid conditions must be accepted by the surgeon as potentially preventable by improved surgical technic. The occurrence of postoperative pulmonary infection is decreased by avoiding even temporary injury to the recurrent laryngeal nerve, and unnecessary handling, exposure and rotation of the trachea.

* From the Mayo Clinic.

ADENOMATOUS GOITER WITH HYPERTHYROIDISM

Adenomatous goiter with hyperthyroidism may be defined as a constitutional disease due to the presence in the thyroid gland of adenomatous tissue which, by maintaining an abnormally high and unregulated concentration of thyroxin in the body, causes an increased basal metabolic rate with the resulting secondary manifestations. The disease differs from exophthalmic goiter, and it is important surgically to recognize this fact, because patients even with intense hyperthyroidism from adenomatous goiter almost never die from the acute, typical "thyroid crisis" so common in exophthalmic goiter. The mortality in this condition is, however, likely to vary considerably from year to year, depending largely on the accidental association of degenerative organic changes from the long duration of the hyperthyroidism in a patient in whom the technical procedures are difficult, owing to the location of the adenomatous masses in relation to the thoracic strait and the recurrent laryngeal nerve. Likewise, the common occurrence of this disease in older and debilitated persons affects the death rate. Finally, the operative risk, whatever it may be, must usually be definitely accepted quite promptly after the patient comes under observation. Unlike exophthalmic goiter, the fluctuations in the intensity of the disease are less marked, and as soon as cardiac decompensation, if present, is relieved, little else can be done to improve the operative risk. Preliminary procedures, such as ligations, are so rarely beneficial that they are seldom performed.

During the year 1922, 201 patients with adenomatous goiter with hyperthyroidism came to thyroidectomy; there were seven postoperative deaths, or a surgical mortality of 3.48 per cent. Besides these, one patient with similar trouble died from myocardial degeneration and decompensation without operation. The apparent mortality rate can be readily decreased by including in this group patients with adenomatous goiter, uncomplicated by hyperthyroidism. In the series of cases referred to here, no case was considered as hyperthyroid unless there was an increase in the basal metabolic rate; all cases in which the basal metabolism was normal were classified as "adenomatous goiter without hyperthyroidism." If the mortality rate were determined for all cases of adenomatous goiter, including those with and without hyperthyroidism, it would be 0.93 per cent., or eight deaths in 864 cases. But a mortality rate determined in this manner, which unfortunately is so often the custom, is of no practical or scientific value, and is as absurd as if the mortality rate after appendectomies performed for chronic appendicitis, or between attacks, as well as for acute suppurative appendicitis with peritonitis was quoted as representing the mortality rate for the latter condition. On careful pathologic examination of the tissue removed from patients in this group with adenomatous goiter with hyperthyroidism, who died, diffuse parenchymatous hypertrophy was not found, thereby confirming within a negligible error the clinical diagnosis of adenomatous goiter with hyperthyroidism, as opposed to exophthalmic goiter.

EXOPHTHALMIC GOITER

Exophthalmic goiter is a constitutional disease, apparently due to an excessive, probably an abnormal, secretion of an enlarged thyroid gland showing pathologically diffuse, parenchymatous hypertrophy and hyperplasia. It is characterized by an increased basal metabolic rate with the resulting secondary manifestations, by a peculiar nervous syndrome and usually exophthalmos, and by a tendency to gastro-intestinal crises of vomiting and diarrhea. The cause of the altered pathologic condition and activity of the thyroid gland is not known. The most disturbing factor from the surgical point of view is the ease and unexpectedness with which a so-called postoperative acute thyroid crisis is initiated, to which the patient often succumbs in from eighteen to thirty-six hours. The average natural course of the disease is not known; that many patients get well spontaneously is undoubted; that there is an appreciable "medical mortality" is equally true.

There were only eleven deaths following operation; all the patients who were given any type of surgical treatment for the thyroid gland during their present visit, and who died from any cause while under immediate observation in Rochester, are considered to have died from surgery. In all, there were 1,093 operations, giving a mortality based on the number of operations of practically 1 per cent. (1.005 per cent.). However, this percentage is distinctly misleading, as multiple operations, such as preliminary hot water injections and ligations, were performed on many patients in a condition too serious for thyroidectomy. That deaths followed these several procedures was due to bad judgment. That the mortality was low showed an average of good judgment in which surgical preparation and accomplishment must be included. The several procedures represent the gravity of the patient's condition, and each has its definite mortality.

During 1922, ligations or thyroidectomy were performed on 633 patients with exophthalmic goiter. On this basis, the mortality rate from eleven deaths is 1.74 per cent. While this is a true mortality rate, so far as it can be determined for this group of patients at the present time, yet it must be emphasized that some of the patients will come to further operative procedures during the next year, and that surgical procedures were started on certain others during the previous year. Therefore, this percentage cannot be considered as representing a final mortality rate by cases. Each year carries its average; yet, dividing the total number of deaths (eleven), by the total number of new patients with exophthalmic goiter coming to the Mayo Clinic during the year (491), which gives a mortality rate of 2.24 per cent., is fully as much in error in the opposite direction because a risk was accepted in 633 cases. The true mortality by cases, therefore, is less than 2.2 per cent., and greater than 1.7 per cent.; the percentage most exactly representing the true mortality by cases, for a single year for a disease necessitating multiple operations at varying intervals, is the average of the two extremes. On this basis the surgical mortality, by case, for exophthalmic goiter is slightly less than 2 per cent. (1.99 per cent.).

Six of the eleven "surgical deaths" followed either ligations (four deaths), or injection of hot water into the gland (one death), or the subcutaneous injection of procain, preparatory to further operative procedures which were abandoned (one death, not to be credited to procain, but to hyperthyroid crisis). It is beyond the scope of this paper to discuss the cause of death. This phase of the subject will be presented elsewhere; but as all deaths from whatever cause are included, it may be said here that in at least four of the eleven "surgical deaths" the operation was not the primary factor.

The general clinical improvement in the condition of the patient that occurs in the two to three months following ligation is on the average so definite that in all

probability the mortality rate from thyroidectomy is sufficiently reduced to decrease the mortality calculated by cases below what it would have been if thyroidectomy had been undertaken immediately; on this assumption the mortality rate for ligations must be accepted as a legitimate individual risk which results in the end in saving life.

After all, the safety of thyroidectomy is the point of paramount importance, as it is this procedure which places the patient in a relatively safe condition, even if it does not bring about an immediate complete cure. During the year, 523 partial thyroidectomies were performed on 521 patients with true exophthalmic goiter, with five deaths, which gives a surgical mortality, by case, for thyroidectomy of less than 1 per cent. (0.96 per cent.).

What are the factors that have permitted a reduction in the surgical case mortality to less than 2 per cent. in cases of exophthalmic goiter, and the reduction in the mortality from thyroidectomy in this disease to less than 1 per cent. (which was the mortality rate for 1921 in cases of nonhyperthyroid adenomatous goiter), and finally reduction of the mortality rate in the latter condition during 1922 to less than one sixth of 1 per cent. (0.15 per cent)? The influence of the administration of iodin on this reduction will shortly be reported in detail by Plummer, and the details of the surgical technic, by Pemberton and Sistrunk. Suffice it to say here that the reduction in mortality is due to the close cooperation of the medical, laboratory and surgical services in seeking methods of avoiding or decreasing the frequency and severity of the so-called postoperative acute thyroid crisis.

SUMMARY

At the Mayo Clinic, during the year 1922, there were nineteen deaths following 1,983 operations on 1,497 patients for diseases of the thyroid gland, giving an operative mortality rate of 0.96 per cent. Such percentages, which are the common method of presenting statistics on goiter, not only fail to reveal the real truth, but conceal facts which, when brought out by a more detailed study, prove to be of great value. Statistics on surgery for goiter should be carefully and accurately analyzed, and the results presented for each disease on the basis of the number of cases.

An accurate basal metabolic rate is an index of the intensity of the disease in both exophthalmic goiter and adenomatous goiter with hyperthyroidism, and, therefore, in conjunction with other factors is of help in selecting the best time and type of surgical procedure. The basal metabolism is of even more importance as an aid in the establishment of a correct differential diagnosis of the various thyroid diseases, and as a result of its use many unnecessary and sometimes harmful operations are avoided.

In this report all patients who died while under immediate observation in Rochester after surgical intervention on the thyroid gland during their present visit are classified as having died from surgical procedures, regardless of the cause of death. The surgical mortality by case, according to Plummer's classification of thyroid diseases, is: adenomatous goiter without hyperthyroidism, 0.15 per cent.; adenomatous goiter with hyperthyroidism, 3.48 per cent., and exophthalmic goiter, 1.99 per cent. The mortality rate for thyroidectomy in exophthalmic goiter is 0.96 per cent. The surgical mortality represents the combined work of eight surgeons.

IMPLANTATION OF BILIARY FISTULA INTO DUODENUM

A NEW METHOD OF TREATMENT

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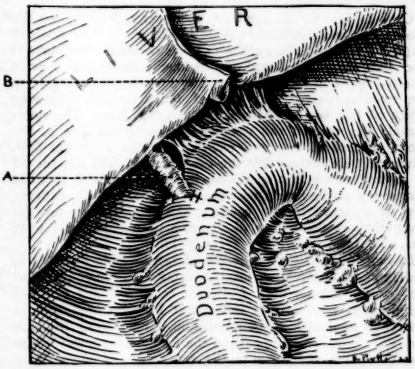
The two cases here reported are published because it appears that Dr. Hugh Williams' case is the first successful transplantation into the duodenum of a common duct fistula; that my case is the second, and that the method is of sufficient simplicity and value to be included in the group of operative procedures available in the treatment of common duct fistula.

REPORT OF CASES

CASE 1.—G. E. M., aged 5 years, white, was operated on, Sept. 3, 1912, at Massachusetts General Hospital. The preoperative diagnosis was embryonic tumor of the right kidney. A large retroperitoneal cyst was found but not identified. It was sutured to the abdominal wall. A section of the cyst



Implantation of fistulous tract into duodenum without dissection of tract from liver bed: *A*, fistulous tract implanted in duodenum; *B*, falciform ligament.

submitted to the pathologist was reported as suggestive of chronic inflammation of the gallbladder. The patient was discharged from the hospital, November 23, with a diagnosis of cyst of the biliary tract.

He reentered the hospital, May 12, 1913, with the statement that six weeks previous to admission the sinus backed up and became puffy, and the bowels were constipated. Since this time, the wound has backed up about every week with the same symptoms. Four days before admission, the patient began to complain of lumbar pain. The temperature was 103 F., and clots of "black stuff" were vomited. He was brought to the accident room, at 8:30 p. m., where a black stool was passed. Physical examination at this time showed a sinus in the middle of the scar of the old operation, draining bile freely. Over the left knee, there were three areas of discoloration. May 9, a blood transfusion was made by Dr. Vincent. The patient was seen in consultation by Dr. Hugh Williams, who advised operation on the biliary sinus. At this time, the stools were clay colored.

The condition improved up to June 25, when an operation for persistent and complete biliary fistula was performed by Dr. Hugh Williams. A circular incision was made about the old sinus, the abdomen was opened by excising the old scar 3 inches (7.5 cm.), the sinus being clamped. Adhesions on being separated revealed an hour-glass gallbladder about the size and shape of a large double peanut, with a cystic

duct about 1¼ inches (3.2 cm.) below the abdominal wall. The gallbladder and cystic duct were removed, and the stump of the duct was tied with fine silk. The adhesions were further separated, and the fistulous tract was found to be continuous with the common duct. A probe could be easily passed down the fistula and up the common duct to the hepatic. The duodenum was adjacent and normal. There was a prolongation of the common duct to the duodenum, but it could not be probed, apparently being obliterated. An intestinal clamp was then applied longitudinally to the duodenum, but opened for one-quarter inch (6 mm.) and anastomosis was done between the fistulous tract and the intestine, the end of the tract being sewed into the side of the intestine with an inner layer of No. 0 plain catgut and an outer layer of continuous silk. A wick was introduced into the side of the suture, and the wound was closed. There was excellent recovery from ether anesthesia.

June 26, the stools showed bile.

June 30, the wick was removed.

July 12, the patient was able to sit up in a chair.

Aug. 4, he was discharged in splendid condition. The wound was dry and solid.

Jan. 16, 1923, Dr. Williams reported that the patient had been seen recently and was entirely well and had been so since the operation.

CASE 2.—Mr. G. G., aged 28, was operated on by me for cholecystitis and pancreatitis, Aug. 4, 1922, at the New England Baptist Hospital. The gallbladder was removed; the common duct carefully isolated, and opened longitudinally, and a drain inserted down to the pancreas. The tube was removed from the common duct at the end of fourteen days, following which all bile was discharged through the sinus. The stools became clay colored and remained so up to the time of the second operation, two and one-half months after the first. Since we were certain that the common duct was not cut off or injured at the first operation, it seemed probable that the persistence of the fistula was the result either of an obliteration or stricture of the common duct. Operation for the restoration of the biliary discharge into the intestinal tract was, therefore, undertaken, October 19.

Having in mind the possibility of considerable difficulty in finding and anastomosing the remaining segment of the common or the hepatic duct, I decided to dissect and preserve the fistulous bile tract in order that I might have it as a reserve to implant into the duodenum if necessary. An incision was therefore made around the fistulous tract and it was carefully cored out down to the under surface of the liver, care being taken to leave a thick wall of tissue about the tract.

The abdomen was opened, and when the common and hepatic duct area was exposed, it was found to be involved in such a mass of indurated tissue that I decided on immediate implantation of the fistula into the adjacent duodenum as the first procedure to be attempted. If this procedure failed, an attempt to find and anastomose the duct could then be made at a later operation. In the dissection of the fistula that ran along the inferior surface of the liver, care was taken not to free it from its liver attachment. The part that had extended from the liver edge to the abdominal wall was implanted in the duodenum, after the button of skin only had been excised. The dissected fistula, now represented by a tube of tissue, reached easily to the adjacent duodenum. A small opening was made in that structure by piercing it on the outer side with a sharp pointed hemostat. The opening was dilated until it would take a segment of No. 16 rubber catheter about 1 inch (2.5 cm.) long, about one half of this segment projecting into the duodenum. This was sutured to the wall of the duodenum and its external end was passed up into the open end of the fistulous tract, the end of which was brought down and sutured with interrupted No. 0 chromic catgut to the opening in the duodenum, and this anastomosis buried by inversion in the wall of the duodenum as with an appendix stump. The free portion of fistulous tract was then covered by omentum, as an additional precaution, and the abdomen was closed without drainage.

The wound healed soundly without leakage of bile, the stools being at once normally colored. The patient has progressed to date (three and one-half months after operation), with normal stools and no evidence of jaundice.

COMMENT

In addition to the foregoing procedure, the methods employed in the repair of permanent biliary fistula, in which the lower end of the duct is cut or obliterated, are: 1. Anastomosis of the end of the duct to the duodenum, jejunum or stomach. 2. Bridging of the gap between the end of the duct and the duodenum or stomach by means of a rubber tube, in some cases covered by attached omental grafts, in others entirely uncovered. 3. The fashioning of a new duct by means of a flap of gastric or intestinal wall and the anastomosis of this newly formed tube to the stump of the duct. Several successful operations by all these methods have been reported.

A search of the literature reveals the report of but one case similar to the two cases reported here. Von Stubenrauch[1] in 1906 reported an implantation of a persistent biliary fistula two months after an operation for drainage of the gallbladder and common duct for pancreatitis. In this case, the fistulous tract, 5 cm. in length, was introduced through the pylorus into the duodenum, and because of the resultant narrowing of the duodenum, an antecolic gastro-enterostomy was done. The operation was unsuccessful because of necrosis of the tract, and later a new duct was constructed from a flap of gastroduodenal wall.

The procedure undertaken in my case seemed logical to me for the reason that if the secretory pressure of bile is sufficient to keep an external biliary fistula permanently open, and this is an established fact, there seems no reason why it should not be sufficient to keep an internal biliary fistula open. If such is the case, as seems possible from Dr. Williams' and my cases, transplantation of the fistulous tract is a much simpler operation than the methods used hitherto, and still permits of their employment should this method prove a failure.

Priority as to the conception and successful employment of this method undoubtedly belongs to Dr. Hugh Williams.[2]

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1. Von Stubenrauch: Chirurgischer Congress, Deutsch. Gesellsch. f. Chir. **35**: 39, 1906.

2. While a guest at the joint meeting of the New York and Philadelphia Surgical Societies, held at Mount Sinai Hospital, New York, Jan. 23, 1923, I heard Dr. Howard Lilienthal report, as a new method of treating biliary fistula, the implantation of a common duct fistula into the stomach, at which time the two cases here published were reported in the discussion. As this paper is being written, I have another case of biliary fistula (common duct) which has been transplanted into the duodenum by the same technic. All sutures are now out, and the stools are well colored with bile.

Mentality of Foreign and Native Born Whites Compared.—Statistics compiled by Prof. H. H. Laughlin, Sc.D., assistant of the psychopathic laboratory of the Chicago Municipal Court, and assistant director of the Carnegie Research Bureau, Cold Springs Harbor, N. Y., and sent to Washington, D. C., show that of a foreign born population of 13,920,692 in 1920, about 8,500,000 rated below the average in fundamental intelligence. Of the native born population of 81,108,000, about 39,800,000 were below the average mentally. Among the native white population the number below average amounted to 49 per cent., and among the foreign born to 62 per cent. In the two lowest grades, the disparity was even greater. In a study of the feebleminded and insane, the statistics show that the native white population, with both parents foreign born, has 65 per cent. more than its expected ratio of feebleminded. In the group in which one parent was foreign born and one native born, the percentage of feebleminded was 90 per cent. above the expected average.

THE DISCOVERER OF THE MODE OF PRODUCTION OF BREATH SOUNDS

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In an article recently published in THE JOURNAL, I [1] reported the discovery that it was possible to abolish all breath sounds as heard over the larynx and the chest by a voluntary separation of the vocal cords. The discovery was entirely original on my part, yet it seemed incredible that so simple and easy a procedure as the voluntary widening of the rima glottidis should never have occurred to any one until the present time. A search through the literature now shows that I had been anticipated by nearly a century.

At the session of the Académie royale de médecine, June 10, 1834, Beau [2] described a case in which he heard a very marked bronchial souffle at the level of the subspinous fossa, in a patient with "effusion of the right pleura" who was breathing noisily. Wishing to know how much the noise of respiration contributed to produce the very loud bronchial breathing, he asked the patient to make less noise, but without changing the rhythm or depth of his breathing. It was then noted that the "tubal souffle" diminished in the same proportion as the respiratory sound in the throat. "I then asked," he says, "whether it would not be possible for him to breathe without making the least sound, and he succeeded in doing so after a few attempts, opening his mouth widely. I auscultated again and heard nothing. During all of this time," Beau continues, "respiration had not lost its frequency, and the chest walls rose as rapidly and as amply as before the experiment." In the case of other patients with bronchial breathing, the experimenter obtained similar results. "With all I caused it (the bronchial souffle) to be suspended or diminished in suspending or diminishing the respiratory sound of the throat. From these facts I conclude that the tubal souffle is not the result of the mechanical passage of air through the bronchi but is the resounding (retentissement) of a sound in the throat, and that it consequently differs from bronchophony only because in the latter the form of resounding is more conspicuous and less articulate (articulée)."

Beau then proceeded to study cavernous respiration, reflecting that there is the same relation between the cavernous souffle and pectoriloquy as exists between bronchial breathing and bronchophony, "the cavernous souffle being the index and, as it were, the condition of a perfect pectoriloquy." Experiments with consumptives decided the question that was in his mind. "I recognized that the cavernous souffle, like the bronchial souffle, was immediately dependent on the respiratory sound of the throat."

"But where and how," Beau goes on to inquire, "is the guttural sound produced? I sought light on this question by observing on myself what took place in the interior of the buccal cavity when one breathes naturally in a manner such as to cause a slight sound." Before a mirror, Beau noted movements of the uvula, more marked when the sound was loud, and concluded that the sound was the result of the breaking of the column of inhaled and exhaled air against the anterior and posterior surface of the veil of the palate. "But is this sound not modified and even often produced by the shock of the column of air against the walls of the nasal and buccal cavities and also against the brim of the glottis? I believe so firmly but I can affirm nothing positively in regard to this, my intention being less to explain the cause of the respiratory sound of the upper throat (arrière-bouche) than the influence that it has on the production of the respiratory sounds of the lung."

BEAU'S EXPERIMENTS

Beau then very logically asked himself "whether, if tubal and cavernous souffle are the effect of the resounding of the guttural sound, it is not the same with the sounds of vesicular and tracheal breathing." To answer this question, he retired to a quiet place and experimented with the aid of a pupil. The following are the most important of the conclusions that he reached in these experiments: 1. When the throat sound is suspended (and one suspends it easily by an instinctive dilatation of the superior respiratory passages), the vesicular sound, the bronchial, tracheal and cavernous souffles no longer exist. Respiration, though silent, is performed as usual; and, if one did not feel under the ear the thoracic walls alternately rise and fall, one might believe that the individual no longer breathed. 2. If one suspends the guttural sound in one of the two respiratory movements, one hears no tracheal or vesicular sound in that one of the two movements that is not accompanied by the sound of the throat. 3. If one produces a sound with the lips so as to blow in expiration and to make a whistling sound in inspiration, one hears the same sound in the trachea and in the vesicles. 4. There are introduced into the mouth of the subjects a few sheets of paper rolled in the form of a tube, large enough so that its diameter corresponds with that of the lips widely opened. This tube is pushed on to the middle of the tongue and is held in the direction of the isthmus of the throat. If in this position the subject holds his breath after a deep inspiration and one seizes the moment to blow through the tube against the veil of the soft palate in a manner to imitate the natural sound of the throat, one hears on auscultation tracheal and vesicular sounds, as when respiration was in progress. A note here gives a word of caution. It is important that the subject refrain from closing the glottis after the inspiration, and that he feel the free entrance of air into the larynx, "for one can see that an interruption in the continuity of the respiratory passages must prevent the sound produced against the isthmus of the pharynx from resounding beyond the point of interruption."

As for the origin of the sounds of respiration, "every respiratory sound transmitted by auscultation (that is, the sounds as they reach our ears) is the result of the resonation of the guttural sound in the column of air that fills the bronchial tree. The shock that this column experiences against the isthmus of the pharynx, or the glottis, determines an oscillation which is communicated rapidly throughout its whole extent and to its least ramifications."

ADVERSE OPINIONS

Such an attack on the accepted doctrine of the day naturally excited interest, and several writers assumed the rôle of defenders of Laënnec's theory. Of these, two will be mentioned. Raciborski's "Précis de diagnostic" was translated into English by Minturn Post and published in New York in 1839. Raciborski, after summarizing Beau's views, denies that a sound produced

1. Bushnell, G. E.: The Mode of Production of the So-Called Vesicular Murmur of Respiration, J. A. M. A. 77: 2104 (Dec. 31) 1921.
2. Beau, J. H. S.: Researches on the Cause of Respiratory Sounds Perceived by Means of Auscultation, Arch. gén. de méd. Series II, 5, 1834.

by blowing against the soft palate is heard in the lungs, and, having denied this, appears to think that all of Beau's claims are satisfactorily disposed of. He apparently did not attempt to repeat Beau's fundamental experiment, "the dilatation of the superior air passages."

This was done, however, by William Stokes, who discusses Beau's experiments in his "Diseases of the Chest," published in 1839. He states that Beau's theory is that the air, striking against the fauces and pharynx, causes vibrations that are communicated downward through the larynx and the trachea. Beau holds, he says, that the mere expansion of the (air) cells produces no sound, and supports the doctrine by adducing the fact that when the individual breathes so as to inflate the lungs without producing the guttural sound, the vesicular murmur ceases to be heard. "I have carefully repeated the experiments of M. Beau and feel convinced that his conclusions are erroneous because I have found in all cases in which his 'respiration silencieux' was performed that I could plainly hear a murmur of expansion in the lung. It is certainly not as loud as natural, but the reason of this is manifestly the fact that to produce silent respirations we must inflate the chest more gently and, of course, with less impulse on the cells of minute tubes." He then brings forward the argument that has had the most weight with more recent authorities who support the view of the intrapulmonary origin of the vesicular murmur. "We can hear a natural respiratory murmur in patients who do not breathe through the mouth and nostrils. Of this we can easily satisfy ourselves by examining a person who has been operated on for laryngeal obstruction. I have now examined eight of these cases and found in all that the respiratory murmur could be heard with ease."

BEAU'S TREATISE

The adverse opinion of such authorities, in the judgment of the medical world of that day, seems to have decided the question of the validity of Beau's conclusions in the negative. In 1856, twenty-two years after the appearance of his article, Beau published a work entitled: "Traité experimental et clinique d'auscultation appliquée à l'étude des maladies de poumon et du cœur." The part of this work that is devoted to the question of the mode of origin of the vesicular murmur brings forward argument and report of experiments for the purpose of defending the propositions that he had enunciated at a so much earlier date. His views as to his fundamental experiments remain unchanged. He emphasizes with greater force the point that, if respiration is continued for some time in such a way that one phase is audible and the other inaudible over the chest, air must necessarily have been admitted, or expelled, during the noiseless phase, thus disposing of the objection that if the vesicular murmur is not heard during inspiration the reason is that air is not admitted. To support this point further, he tied a hog's bladder about the end of a tube, and breathed through the other end of the tube. The bladder, he says, expanded and collapsed. And, he adds, it was possible to abolish the sounds of breathing while using the bladder. But it was in vain that he thus republished and fortified his views. They seem to have attracted little notice and no following, and his name is rarely referred to by later writers on physical diagnosis. There is no occasion for surprise at this fact, for his theory of the production of the sounds of respiration was manifestly incorrect in the view of students of a later day, and that served to prejudice the acceptance of his experimental evidence.

It was Beau's misfortune that he made his discovery at a time when the rôle of the vocal cords in the production of the bronchial sounds of respiration had not been established as it now is. Nor had laryngology been erected into one of the recognized branches of medical science and art even at the time of the publication of his treatise. Liston,[3] in 1840, had reported the successful use of a laryngeal mirror which seems to have been similar to that now used by dentists. As he described it, the instrument was a speculum, or "a glass on a long stalk," and was used, of course, by direct illumination. Since Liston's time, nothing further seems to have been done until Garcia published in 1855 a series of laryngoscopic studies as to the mode of formation of the voice. Czermak began his laryngoscopic studies in the course of the winter of 1857-1858. During 1858, several articles were published in Vienna by him and by Turck, who disputed with him the honor of inventing the laryngoscope, and it is in that year that laryngologic literature may be said to have commenced. Czermak introduced a "large ophthalmoscope" as a reflector, and used artificial light, thus freeing the new art from its former dependence on the sun's rays, and making its systematic study possible. His work[4] appeared first in 1860.

VIEWS OF ANATOMY AND PHYSIOLOGY OF THE LARYNX

Beau's treatise, however, manifests some progress in acquaintance with the anatomy and physiology of the larynx. A change in his views as to the relative importance of the veil of the palate and of the glottis in the production of respiratory sound is shown in the following abstract.

The orifice of the glottis is mobile. Its lumen may be diminished until it disappears, or augmented until its diameter is that of the larynx. In the latter case the inferior (true) vocal cords fill the ventricles, and the superior cords efface themselves. When the lumen is normal (15 cm.), a distinct sound is produced in respiration, which increases with the narrowing of the orifice. The orifice of the glottis constantly presents an obstacle to the passage of air which causes vibrations. The glottic souffle is then heard. It is the sole normal sound that is connected regularly with the respiratory functions, and is the only sound with which henceforth we have to occupy ourselves. The opening of the larynx is immobile. It has a lumen of about 40 cm. If one accelerates the respiratory movements beyond forty-five respirations a minute (the vocal cords being fully appressed), a noise is produced which is heard loudest over the upper portion of the neck. The opening of the larynx has now become the narrowest part of the superior respiratory passages, and this orifice, which causes no sound when the air traverses it slowly, gives rise to sound when the air passes rapidly and in great volume.

From the foregoing, it appears that the larynx is now granted the chief rôle in the production of respiratory sound, but that the relation of the vocal cords to the sound is still not apprehended. The vocal cords for Beau were simply movable obturators which have the effect of increasing sound in proportion to their degree of approximation until their closure causes it to cease. The rima glottidis is still simply a crevice, and the sound produced on the passage of air through it is for him apparently dependent only on the size

3. Liston: Practical Surgery, 1840.
4. Czermak: The Laryngoscope and Its Employment in Medicine, Selected Monographs, New Sydenham Society, 1861.

of the aperture. It might be expected that the writer who so acutely compares bronchial breathing and bronchophony, on the one hand, with the cavernous souffle and pectoriloquy, on the other, would take the next step and see that the mechanism that is known to originate vocal sound must be the one that likewise originates respiratory sound. He was familiar with the experiment of Legallois, who exposed the vocal cords by an incision in the living rabbit and knew their respiratory movements. But he could hardly have seen the larynx of the living man, and was ignorant of the fact that the vocal cords, which shrink into insignificance after death, in life as they overhang the cavity of the larynx are ready when not under willed tension to flutter with the least current of air. In other words, he did not understand that the edges of the relaxed vocal cords assume a rôle in breathing analogous to that of the tense cords in phonation. His statement that, with sufficient rapidity and force of the air current, laryngeal sound is producible when the rima glottidis is wide open could be confirmed only by continuous laryngoscopic observation during the production of the sound. The belief of Stokes that shallow breathing is a necessary condition for the suspension of the respiratory sounds is unfounded.

Beau, in his article, indicates the true nature of the mechanism of dilatation. Speaking of cases of asthma with very labored breathing, he says: "In asthma inspiration is brusque, instantaneous, *silent*, and gives no guttural sound; to make it the patient throws back the head and opens the mouth wide, and this in a convulsive manner. Expiration, on the contrary, is long and noisy. One hears in inspiration no vesicular, bronchial or tracheal sound, although the thorax rises. . . . All of the inspiratory muscles are in a state of spasm, but it is not, as Laënnec thinks, a spasm that narrows the respiratory passages; on the contrary, it is a spasm that dilates them. It follows that the air, traversing rapidly, encounters no obstacle in mouth, pharynx, and glottis, convulsively dilated; there can be then no production of guttural sound, and hence no tracheal or vesicular resonation of the sound." This passage is quoted, not because I wish to side with Beau in his polemic against Laënnec, but for the light that his observations throw on the nature of the inspiratory phase of respiration that is accompanied by intense dyspnea. Other writers state that the vesicular murmur is not heard over the chest. This is generally explained, no doubt, by the assumption that very little air is admitted into the lung. Still, while the lung is undoubtedly overfull of air, it remains overfull. Air is expelled at each expiration, with, however, great difficulty; aeration is imperfect, to be sure, but life is preserved. There can be, of course, no doubt that air is admitted to some extent into the lungs at each inspiration. Now, to one conversant with the slightness of the current of air that will produce respiratory sound when the vocal cords are in their normal relations of approximation, the entire absence of the vesicular murmur is a fact that is of considerable significance in this connection, for it shows that the vocal cords are not in their usual position. The sounds of the trachea during the inspiration of very dyspneic asthma have been studied, so far as I know, only by Beau, who reports their absence.

MECHANISM OF THE NOISE OF RESPIRATION

In ordinary inspiration, the vocal cords diverge from their position of rest; with slight dyspnea (and always more or less in horses), the alae nasi also dilate; in intense dyspnea, the patient instinctively throws back his head, thus straighening the air passages, and opens his mouth wide. Whether the vocal cords are separated to their fullest extent at the same time is not known from other observations than those of M. Beau, but it is probable; the laryngeal muscles are capable of producing a much wider separation of the cords than that of normal inspiration, as I myself have demonstrated.

The process is conceived of in this way: The various dilating mechanisms of the upper air passages are linked together in a system, the various members of which are successively called into play as the nervous stimulation increases. The dilatation of the rima glottidis is the most important of all of the devices for the removal of impediments, even the slightest, to the access of the largest possible volume of air to the imperfectly aerated lung. When, therefore, the experimenter seeks to separate widely the vocal cords, he imitates the paroxysmal dilatation of extreme dyspnea. He throws back his head and opens his mouth wide and, as Beau says, he instinctively makes an effort to open the throat. This amounts chiefly to the activation of the laryngeal dilators, but is accompanied by the sensation of the activation also of the faucial musculature. There can be no question for one who is familiar with the method that, in bringing into play one portion of the dilating mechanism, one almost necessarily sets the whole process into automatic operation. With these muscular contractions is instinctively combined a mighty inhalation of air, so that after inspirations which have been successful in abolishing the vesicular murmur, the lung may be overfilled. Stokes' opinion, already referred to, that "to produce silent respiration we must inflate the chest more gently," is therefore incorrect; the experiment succeeds at first only when the chest is inflated ad maximum, although with more practice it is possible to acquire the knack of keeping the vocal cords separated without simulating so closely in other respects the dyspnea paroxysm.

The objection of Stokes that he could always hear a murmur of expansion simply shows that he had not mastered the method of Beau. It is extremely easy to open the larynx widely enough to eliminate the harsher tracheal sounds—several of my friends proved capable of doing this at the first trial. As I had no guide in my experiments, I for some time believed that the partial opening of the rima which I was effecting had been sufficient to eliminate the tracheal element of respiratory sound, and supposed that the remainder of the sound that persisted in the breathing represented the vesicular element originating within the chest. But further practice showed that the vesicular murmur could also be abolished when the cords were appressed against the walls of the larynx with a greater effort. When the idea occurred to me of checking up the success of the separation of the vocal cords by means of self-auscultation over the larynx through a binaural stethoscope, it became easy to control the procedure, and the complete dependence of thoracic on laryngeal sound was established to my satisfaction. If the larynx was silent during inspiration, an observer, listening over the chest, did not hear the vesicular murmur; and, conversely, if any sound was heard over the larynx, a sound was heard also over the lung.

Sound originating in the larynx and heard in the lung is carried down through the tracheobronchial tube to the air cells, as through a speaking tube. If this were all, tones of any pitch originating in the larynx would reach the ear applied outside the chest; or, more specif-

ically, the ear would hear tracheal breathing, which, of course, it fails to do if the pulmonary parenchyma is normal. The air cells, therefore, do not permit all manner of sounds to pass through them. The only sound that passes with ease is what we call the vesicular murmur, a deep-pitched sound. Investigators, among whom F. Müller of Munich and his associates are prominent, have shown that the pitch of the vesicular murmur and the pitch of the chest note of percussion are the same, and that both are approximately of the pitch of the fundamental tone of the thorax as a resonator. A perfect resonator answers tones of its own pitch and is silent to other tones. The thorax is not a perfect resonator from the standpoint of the physicist, but it would lead too far to discuss its peculiarities in the present connection. It is enough to say that the thorax is necessarily a resonator, just as all air-containing cavities with firm and elastic walls are resonators in the wider sense.

Beau, as has been shown by the preceding quotations, grasps at once the idea that the laryngeal sounds undergo resonation in the thorax. For him, a single sound in the upper air passages undergoes resonation in the various cavities connected with the respiratory apparatus, the differences noted in pitch and quality of tone being due, according to his idea, to the varying size of the cavities concerned. We would say today that laryngeal sound is a noise made up of a large number of individual tones, and that tones are selected by the various resonators (for the bronchi are also resonators) which are of or near to their fundamental tones. Sounds that have been amplified by resonators may owe their characteristics almost entirely to the resonator, and this is more likely to be true of weak tones, such as those of respiration. Just as the tones of the organ are not the tones of the air blast or of the reed, but of the pipes that are stimulated through these means to the production of vibrations of their own proper periodicity, so any noise that is present in the respiratory passages during inspiration, however created, if it contains tones of the proper rate of vibration, will give rise to a sound in the lungs that has the same pitch as that of the vesicular murmur, it may be to a sound indistinguishable from the vesicular murmur by its quality.

Beau is aware of the fact that sound is very easily produced by a current of air that issues from a narrow into a relatively wide air space. In his experiment with the hog's bladder, he is careful to call attention to the point that in this experiment a tube must be employed with an internal diameter at least equal to that of the trachea, which, he states, is about 2 cm. A narrower tube, he says, would produce sound at its extremity. Beau was clear-headed enough to perceive that it would be fatal to the success of his experiment if, though he held the larynx open and abolished the vesicular murmur, he nevertheless permitted a sound to be created within the apparatus which was capable of simulating that murmur. He thus practically solves the dilemma that his experiments create. The experiments have shown that the vesicular murmur depends on laryngeal sound; yet what seems to be the vesicular murmur may be heard, as Stokes, and many others, point out, though the current of air does not pass through the larynx at all in respiration. In view of his ignorance of the physiology of the larynx and of the laws of sound, M. Beau's clearness of vision is extraordinary.

One writer ranged himself at his side in this question. Robert Spittal,[5] in reviewing Beau's article of 1834, states it as his opinion that the guttural sound is loudest and has its main origin at the upper part of the larynx, and is probably produced at the rima glottidis, "where the air in passing to and from the lungs and meeting an impediment to its free passage is thrown into sonorous vibrations." The persistence of respiratory sounds observed by Raciborski in a rabbit, the trachea of which had been cut through, so that the animal breathed through the opening, Spittal thinks, does not affect the theory of Beau. It does not appear that any other writer up to the present time has entertained the possibility that the tracheotomy tube, or other apparatus, that side-tracks the vocal cords might itself become a source of sound. Yet it is extremely difficult, unless one resorts to the precautions urged by Beau, to avoid the production of sound by air which passes through a tube situated, like the tubes under consideration, within resonant cavities, because amplification by these cavities will increase the loudness of a sound that was insignificant, perhaps scarcely audible, outside the body.[6]

As reported in the previous article, I once underwent a laryngoscopic examination in connection with my experiment. The examination was prolonged; the laryngeal muscles wearied under the comparatively unwonted strain; they began to quiver. The resulting quivering of the vocal cords was seen by the laryngologist and felt by the subject. For those who listened with stethocopes over the lungs, it was made apparent by intermittent sounds. The minimal projection of the vocal cords, as they oscillated in the tremulous movement, was therefore sufficient to produce sound audible over the lung. That sound, however, alone was heard, and under the circumstances it was readily identified by its interrupted character as of laryngeal origin; otherwise the experiment would, no doubt, have been adjudged a failure. This experience shows clearly enough what extreme care must be used to prevent sound from causes so insignificant as to be readily overlooked.

Another point, Beau was only too much inclined to the belief that any and all sound in the upper respiratory tract would excite the lung sound; but later writers, as a rule, do not seem to appreciate the full significance of the fact that, independently of such special conditions as result from operative or other instrumental interference, sound may be produced in the upper air passages by vibrations other than those of the vocal cords, which is distinguished with difficulty from the true respiratory sounds. Spittal quotes Magendie[7] as stating that he (the latter) had noticed the sounds referred to by Laënnec as being formed in the back part of the mouth and in the nasal fossae (which Laënnec thought had no effect on respiratory sound), and thinks that they may have some influence on those perceived in the human chest. But we do not need a great man of the past to confirm these views. Does not every auscultator take pains that his subject shall breathe normally, making no noise in the throat or at the lips? Why, if not because such abnormal sounds are transmitted to the lung and may confuse the true breath sounds? And

5. Spittal, Robert: Experiments and Observations on the Cause of the Sounds of Respiration, Edinburgh M. & S. J. **138**: 99, 1839.

6. Baas (Deutsch. Arch. f. klin. Med. **9**: 257) first, after Beau, maintained the laryngeal origin of respiratory sound, modified in the infundibula to become vesicular breathing. He explained the persistence of inspiratory sound when the trachea is cut below the larynx by supposing that the sound originated from the striking of the current of inhaled air against the edges of the forkings of the bronchi. According to him, there is no expiratory breath sound under such conditions.

7. Magendie: Lectures, Lancet, 1834-1835, p. 793.

if abnormal admixtures are thus readily transmitted, what difficulties stand in the way of the transmission of the breath sounds themselves from larynx to lung?

VALUE OF BEAU'S DISCOVERIES

I have been able to confirm by my own experiments the statements of Beau as to the mode of production of the vesicular murmur, of tracheal breathing and of bronchovesicular breathing. I am therefore perhaps better fitted than any other to value at their true worth the discoveries of M. Beau, and it affords me great satisfaction to be in the position to rescue from oblivion, so far as I may, the work of an able man who was in advance of his time.

Beau's discoveries cannot be neglected by students of physical diagnosis, for they are fundamental for a correct understanding of the mode of production of breath sounds, both normal and abnormal. Here, at last, we have the problem put on an experimental basis. It is unnecessary to detail the results of theorizing on these points, for every one knows the variety of hypotheses that have been propounded, especially with regard to the origin of the vesicular murmur. Only one thing seemed settled, and that correctly, namely, the fact that the sound of expiration, as heard over the lung, is conducted from the larynx; but even this the latest writer on the subject, Martini,[8] puts again into question on the ground that bronchial breathing is heard over the seventh cervical vertebra when a tracheoscope is in position, and therefore has its origin in the bronchial tubes.

As I am not in active practice, I have not been able to conduct experiments as to the origin of morbid breath sounds, with the exception referred to above, for in this field the experimenter is obliged to depend on the patient. Beau was fortunate in finding patients both docile and at the same time intelligent enough to acquire quickly the art of opening the larynx.

It is to be hoped that observers who have control of clinical material will apply Beau's method to the study of the mode of origination of the morbid breath sounds.

IS ORTHOSTATIC ALBUMINURIA A UNILATERAL DISORDER?

CLARENCE QUINAN, M.D.
SAN FRANCISCO

Pavy, in 1885, described an affection of the kidneys in which albumin is present in the urine while the patient is up and about, but disappears after rest in bed. Most of his patients were young and apparently healthy persons. Although he was aware that the urine usually remains free from albumin during recumbency, nevertheless he gave it as his opinion "that albumin may be persistently present and yet not necessarily mean that a grave condition exists." Since then, his description of the now familiar orthostatic albuminuria has been confirmed in every particular.

There is but one pathologic report in the literature of the subject. Heubner found a single minute lesion, measuring 1 by 5 mm., in the right kidney of a girl, aged 10 years, who had a cyclic albuminuria, and who died of a cystic glioma of the brain. Otherwise both kidneys were normal.

In this paper I bring together for what they are worth the results of some kidney fixation experiments in a marked case of orthostatic albuminuria. The object of the investigation was to determine, if possible, whether this disorder is always left-sided. My results seem to show that such is not the case. However, as the data are quantitative in character and cover a period of eight years, they may be useful in a small way to others.

Previous work of pertinent interest deals with (1) palpatory albuminuria, (2) movable kidney and lordosis, (3) clinostatic albuminuria and (4) ureteral catheterization.

PALPATORY ALBUMINURIA

Menge, in 1900, demonstrated that albuminuria can be easily induced by manual palpation of the kidneys. His patients, twenty-one in number, all had movable kidneys. In twenty patients the right kidney alone was movable; in one patient both kidneys were movable. Albuminuria was noted in fifteen patients after palpation of the kidneys. In one instance, after manipulation of the right kidney, catheterization of the ureters revealed an albuminuria limited to that side. Menge believes that various unknown factors determine the palpatory sensitivity (Empfindlichkeit) of the organ. He suggests that pressure from without, possibly that due to the clothing, may be a contributory factor in orthostatic albuminuria. Schreiber, Zebrowski and Seelig confirm Menge's results, while Gomolitzky was successful in only eight out of thirty-five cases.

This direct reaction of the cortical pulp to external pressure, and the conditions that govern it, as a practical research problem, may have received less attention than it deserves. The fact seems to established, however, that manipulation of the renal cortex causes albumin to appear in the urine.

Many workers entertain the idea that orthostatic albuminuria connotes a venous stasis due to compression of the renal vein. Here, it is held, renal mobility and lordosis facilitate obstruction.

MOVABLE KIDNEY AND LORDOSIS

Nivière describes the case of a man, aged 20, who had a movable right kidney and orthostatic albuminuria, and he declares that a firmly applied abdominal bandage gave the patient great relief.

Mosny had a similar experience in the case of an hysterical young woman of the same age, who had a slightly movable left kidney. He states that when this kidney was supported with a proper bandage the albuminuria disappeared.

Lury tried to control orthostatic albuminuria in children by manual fixation of the kidneys. This procedure was carried into effect with the child's body bent in lordosis on the knee of an assistant. Albumin completely disappeared from the urine of four patients after fixation of the left kidney, and in three patients after fixation of the right kidney. In four other patients, in order to obtain urine free from albumin, it was necessary to support both kidneys. He does not express an opinion as to the value of bandaging in the treatment of movable kidney, but other workers object to this procedure. Menge, for example, emphatically warns against massage of the kidney region and the use of supporting bandages in nephroptosis. Sutherland, also, who has had considerable experience with this plan of treatment, condemns it.

Jehle made the important discovery that lordosis, in some persons, may exert a definite influence in postural albuminuria, and that, even in the horizontal decubitus, albuminuria can be induced by lying on a hard pillow.

8. Martini, Paul: Studien über Perkussion und Auskultation, Deutsch. Arch. f. klin. Med. **1899**: 257.

Just what this curious phenomenon signifies is still problematic. It is usually held to indicate an obstruction of the renal circulation at some point external to the organ. But the explanation that it is due to compression of the renal vein by the advancing lumbar arch, in lordosis, would be more convincing if it were not for the fact that orthostatic albuminuria commonly occurs in movable kidneys. Moreover, cyclic albuminuria is not invariably orthostatic in type.

CLINOSTATIC ALBUMINURIA

Rolleston, in 1902, was first to note the clinostatic form of albuminuria. He states that "in some patients with considerable splenic enlargement, rest in bed or in the recumbent position may be accompanied by albuminuria, and the albumin may disappear from the urine when the patient assumes the erect position."

Amblard made a similar observation in three gouty patients. The urine collected in the period from midnight to 4 a. m. was albuminous—as much as 1 part per thousand—but was free from albumin throughout the day.

Dufour and Muller were able to prove that clinostatic albuminuria is not necessarily of mechanical origin. Their patient, a boy, aged 16, had an intermittent clinostatic albuminuria. They finally discovered that albumin made its appearance in the urine only after the act of masturbation, and therefore attributed it to nervous exhaustion.

URETERAL CATHERIZATION

Vorpahl catheterized both ureters of a girl, aged 12 years, who had orthostatic albuminuria and a left lumbar scoliosis, and found that the albumin came from the right kidney alone. The urine from the left kidney was normal.

Von Stejskal states that in three of his patients the albuminuria was bilateral. Of these, in one patient, he could detect no difference between specimens of urine from the two kidneys. Of the remaining two patients, the albuminuria was predominantly right-sided in one and left-sided in the other.

Sonne found that the albuminuria was left-sided in two out of six patients catheterized in lordosis. He advances the idea that orthostatic albuminuria is always left-sided, and that it is due to compression of the left renal vein by the lordotic vertebral column, the pressure probably being transmitted through the abdominal aorta.

REPORT OF CASE

History.—E. T., a man, aged 23, seen, Jan. 20, 1915, who was apparently in good health and whose family history was negative, had an attack of whooping cough in his seventh year, following which albumin was discovered in the urine. It had persisted ever since. In 1910, he was confined to his bed for five weeks with "kidney trouble"; he felt worn-out Otherwise he had always been free from sickness. He was an ardent sportsman, and for a number of years followed the life of a "field-naturalist." In 1916, he enlisted in the U. S. Army, for service on the Mexican border. Subsequently he transferred to the aviation service, in which he rose to the rank of captain. He was enabled to pass all physical examinations by substituting for his own urine that of a comrade. Shortly after the armistice was declared, after two years of continuous flying duty on the western front, his health broke down. He "got weaker and weaker, lost a lot of weight, and slept heavily." The urine at this time was lessened in quantity and dark in color. He had no localized edema nor any spasmodic symptoms. One month's rest in bed on a milk diet, together with relief from active duty, restored him to his usual health. Since leaving the army, his work, that of "outside solicitor" for a transportation company, had kept him almost constantly on his feet. Sept. 14, 1922, he complained of feeling exhausted; he had "gas-pains" and gastric distress. Rest, laxatives and a smooth diet gave relief. At present, January, 1923, he has every outward appearance of vigorous health.

Examination.—The patient, Jan. 20, 1915, was well developed, muscular, and of erect and athletic figure. There was no lordosis in the upright posture. His height was 5 feet 8 inches (173 cm.), and he weighed 148 pounds (67 kg.). With the exception of a slight facial pallor, he looked physically fit. The right kidney was freely movable; the left could not be felt. In other respects, the examination of the trunk was negative. The superficial and deep reflexes were normal. The eyegrounds were normal. No enlarged glands were felt. The urine contained a large amount of albumin. There were a few hyaline casts in the sediment. He was instructed to bring for examination samples of urine collected (1) before rising from bed in the morning, and (2) after being up and about for some time.

January 22, the two urine samples collected January 21, and a third sample voided at 3 p. m., contained, respectively, 0.75, 6 and 7.5 parts per thousand of albumin. A diagnosis of orthostatic albuminuria was made.

It was not until early in May, 1922, after the lapse of seven years, that I was enabled to resume the study of this patient.

May 4, 1922, the general physical status remained as reported in January, 1915. Blood counts showed 4,500,000 red cells and 7,900 leukocytes. The differential count was: polymorphonuclears, 62; small lymphocytes, 32; large mononuclears, 3; eosinophils, 1, and transitionals, 2. The blood pressure was 122 systolic, 85 diastolic, and was not appreciably modified by change of posture. The eyegrounds were normal. The orthostatic albuminuria persisted. Quantitative precipitation of the urinary proteins took place, on the water-bath, at from 73 to 75 C. The albumin was not precipitated in the cold by acetic acid.

EXPERIMENTS WITH A KIDNEY SUPPORT

Technic.—For a period of five months, from May to October, 1922, various experiments were carried out with a view to control the orthostatic albuminuria by unilateral kidney fixation. This work was facilitated by the employment of the simple mechanical device illustrated in Figure 1. This clamp can easily be taken apart or assembled, and with it one kidney can be braced up securely without exerting pressure on or impeding the movements of the other one. In applying it, we first slightly raised the pelvis on a pillow. The clamp was then adjusted in place, the sliding block was moved to the desired point, some wadding was slipped under the bearing surface, and after the kidney had been pressed upward with the hand, it was held in any desired position by pressure applied with the screw-nuts. Throughout the work, all the urine samples were obtained at the same hour of the morning, before breakfast. In a typical experiment, specimens were taken at 7, 7:20 and 7:40 a. m. The patient voided the first specimen while still in bed, and applied the clamp immediately thereafter. He then assumed the vertical position and moved about as he pleased. At 7:20 the clamp was removed, and the No. 2 specimen was collected. At 7:40 a. m., twenty minutes after the removal of the clamp, the third and final specimen was obtained. The amount of albumin in each sample of urine was determined by Esbach's method.

Results.—Forty experiments were made, in all, and 120 samples of urine were examined.

Appearance: The No. 1 specimens, voided at 7 a. m., usually were clear and normal in appearance. The two specimens collected during the ensuing forty minutes, on the contrary, were never quite clear, and they often more or less resembled suspensions of gum arabic.

Specific Gravity: The specific gravity of the urine collected before the patient rose from bed varied from 1.014 to 1.023. The mean value found for thirty-five of the No. 1 specimens was 1.018. Specific gravity determinations by

weight, on an analytic balance, Jan. 18, 1923, gave values for the urine samples collected on that date as presented in Table 1.

Albumin: Speaking in a general way of the albumin determinations, the results show that the orthostatic albuminuria was not in the least affected by the supporting of either kidney alone or both kidneys together. Lordosis could be ruled out. The grand averages given in Table 2 were obtained from 120 determinations.

At first, the relatively low values obtained for the No. 2 specimens seemed to indicate that the clamp retards albumin elimination. That this is not the case, however, became

TABLE 1.—*Specific Gravity in Orthostatic Albuminuria*

Specimen No.	Time	Posture	Specific Gravity	Albumin Parts per Thousand
1	7:00 a. m.	Horizontal	1.0150	9.90
2	7:20 a. m.	Vertical	1.0160	3.75
3	7:40 a. m.	Vertical	1.0161	5.00

TABLE 2.—*Average Albumin Output in the Urine in Orthostatic Albuminuria (Five Months' Period)*

Specimen No.	Posture	No. of Sp. Examined	Albumin Parts per Thousand
1	Horizontal	40	1.24
2	Vertical	40	4.30
3	Vertical	40	7.60

evident before long, for in every experiment this sample proved to be intermediate in value between the other two. Obviously, therefore, a time element governs the eliminating mechanism; the albumin elimination curve rises gradually.

One rather striking fact may be mentioned that seems to be of some practical value in connection with the treatment of this disorder. During the first three months, it was observed that the No. 1 specimens, voided before the patient rose from bed, contained from 1.5 to 2.5 parts per thousand of albumin. The presence of so much albumin in the urine during recumbency was surprising, because the usual clinical symptoms of nephritis were absent. The blood pressure was 122, the heart sounds were not accentuated, he had no head-

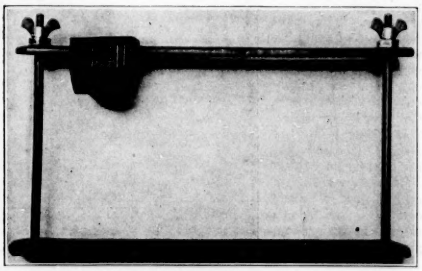
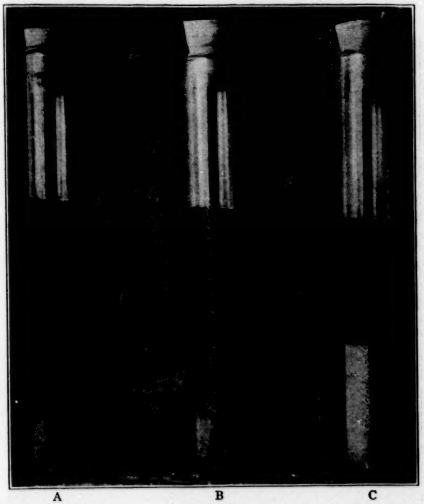


Fig. 1.—Kidney fixation clamp, 7½ by 12 inches; a wooden block 2 by 2¼ by 2 inches slides on a thin strip of ash wood measuring 1½ by 13 inches; the screw bolts are 8 inches long.

ache, and there were no other signs of chronic uremic intoxication. It seemed unlikely, therefore, that such a pronounced clinostatic albuminuria could be regarded simply as an expression of chronic interstitial nephritis. Subsequent experiments strengthened this impression, for it was found possible in the course of time to reduce the nocturnal albuminuria either (1) by having the patient sleep with the foot of the bed raised from 2 to 4 inches, or (2) by a small daily dose of cascara sagrada, with a light mercurial purge once a week.

Figures 2 and 3 give a fair idea of the way the albumin output is affected by this treatment. I suppose these simple measures produce their good effects by counteracting a general tendency to visceroptosis. At night, the gravity pull on an inclined plane promotes replacement; by day, the evacuation of the lower bowel perhaps minimizes a drag in the opposite direction. Whatever the explanation may be, a



A B C

Fig. 2.—Esbach tests: appearance after twenty-four hours; *A*, horizontal specimen, 7 a. m., patient recumbent; *B*, first vertical specimen, 7:20 a. m.; *C*, second vertical specimen, 7:40 a. m.; kidneys free.

combination of these two principles, together with plenty of rest and a smooth diet in which milk predominates, is worth trying in any case of orthostatic albuminuria in which reconstructive treatment seems worth a trial.

All the urine samples collected in the vertical position (Nos. 2 and 3) gave uniformly high albumin values. But as

TABLE 3.—*Albumin Elimination During Period of Eight Years in a Case of Orthostatic Albuminuria*

	Albumin in Parts per Thousand		
	7:00 a. m. Patient Horizontal No. 1	7:20 a. m. Patient Vertical No. 2	7:40 a. m. Patient Vertical No. 3
Jan. 20, 1915.....	0.75	...	6.0
May 4, 1922.....	2.25	4.0	8.0
Jan. 18, 1923.....	0.90	3.75	5.0

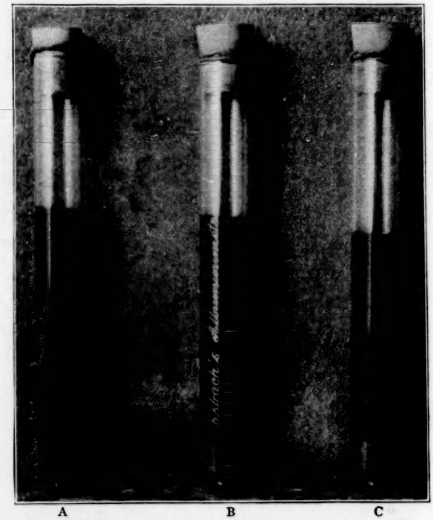
the figures noted from week to week do not vary much from the general averages already given, a detailed report of them seems unnecessary.

The fairly constant character of the albumin values in this case is best shown in a comparison of the data noted at different times throughout a period of eight years (Table 3).

COMMENT

A man, aged 30, erect of figure, muscular and free from lordosis, for at least eight years has had a clino-orthostatic albuminuria with slight evidence of nephritis. The clinostatic albuminuria varies from 0.4 to 2.5 parts per thousand of albumin; the orthostatic albuminuria from 5 to 8 parts. Most of the time his health has been excellent, but, at rare intervals, he has

had attacks of "kidney trouble." Mentally, he is highly temperamental, and he is rather easily depressed. His right kidney is freely movable. Experimentally, the orthostatic albuminuria is not affected by the supporting of either kidney alone or both kidneys together. On the other hand, the clinostatic albuminuria can be greatly reduced by having him sleep with the foot of the bed raised a few inches. How are these facts to



A B C

Fig. 3.—Esbach tests: appearance after twenty-four hours: effect of raising foot of bed 4 inches; *A*, horizontal specimen, 7 a. m., patient recumbent; *B*, first vertical specimen, 7:20 a. m.; *C*, second vertical specimen, 7:40 a. m.; kidneys free.

be interpreted? Obviously, they lend no support to Sonne's theory that orthostatic albuminuria must be left-sided. On the contrary, the circumstance that the clinostatic albuminuria quickly diminishes when the bed is raised would tend to focus attention on the freely movable right kidney as the seat of the disorder. Unfortunately, I was unable to examine this patient by ureteral catheterization, and therefore cannot settle this point by direct evidence.

CONCLUSION

I would suggest that the results which other workers have obtained by various experimental methods are of such a conflicting character that it appears impossible to uphold a purely mechanical theory of orthostatic albuminuria. There are most likely several unknown factors to reckon with, one of which, quite possibly, will have to be sought in the autonomic nervous system.

2512 Washington Street.

Tuberculosis Campaign.—For the time being, it seems the part of wisdom for the organized tuberculosis movement to broaden its horizon and its scope; to take cognizance of all of those agencies and means of health promotion which may contribute to the efficiency of its work, looking forward to a day when it will become practicable to consolidate all of those organizations whose work is so closely akin.—George T. Palmer, *Am. Rev. Tuberc.* **3**:275 (July) 1919.

CONGENITAL SARCOMA OF KIDNEY IN A CHILD OF TWENTY-NINE DAYS*

CLYDE LEROY DEMING, M.D.
NEW HAVEN, CONN.

The object of the report of this case is to emphasize (1) the value of complete cystoscopic examination in children; (2) the fact that urograms are just as essential in the examination of infants as in that of adults, and (3) that local anesthesia may be used for nephrectomy in infants.

REPORT OF CASE

History.—A boy, aged 29 days, admitted to the urologic service of the New Haven Hospital, Nov. 22, 1921, the first child in a family in which there had been no other pregnancies, gave an unimportant family history. At birth, which was natural and spontaneous, the weight was 7 pounds 8 ounces (3,398 gm.). During the first, third and fourth days of life, the child passed blood in the urine. On the fourth day especially, the urinary passage resembled pure blood which was bright red. Blood was also noticed in the stools at this time, by the family physician. Subsequently, no blood was noted from either tract. The child, although a breast-fed infant, did poorly and lost weight, so that when 14 days old, it weighed only 5 pounds 4 ounces (2,378 gm.). It then began to gain, took the feedings well and slept well. The stools were often green and their passage was attended by a moderate amount of colicky pain. Vomiting and regurgitation were present, but were not a marked feature until a week before entry to the hospital, when the child vomited half or more of every feeding. The mother had noticed that the abdomen had gradually become larger, and she had thought it unusually large since birth.

Physical Examination. — The weight was 7 pounds (3,171 gm.); rectal temperature, 99.6 F.; pulse, 96. The child was pale and poorly nourished. There were no congenital malformations of head or extremities. The main features of interest were found in the abdomen, which was enlarged, especially on the right side. Collateral circulation was present in the large, distended superficial veins of the abdominal wall. The outline of a mass could be seen in the right side during respiration. Palpation revealed a mass filling the whole right side of the abdomen and extending a finger's breadth beyond the navel. The lower border reached to the crest of the ilium and the symphysis pubis. Superiorly, the mass escaped beneath the costal margin. The demarcation between it and the liver was not definite. The upper border of the liver, as noted by percussion, reached to the fourth interspace in the right nipple line. The lower pole of the mass was rounded and smooth. Its surface was also smooth and tense, and gave the sensation of a cystic tumor.

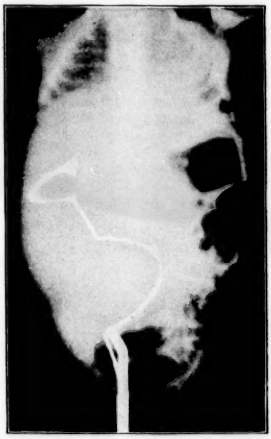


Fig. 1.—Course of ureter and transverse position of the kidney pelvis. The kidney tumor occupies the right side of the abdomen, replacing the intestine to the left.

* From the section of surgery, Yale University, and the surgical clinic of the New Haven Hospital.

It descended slightly with respiration, and could be moved slightly upward and a little to the left. The percussion note over it was everywhere flat. The spleen was not enlarged. The left kidney could not be felt. A roentgenogram showed that the right side of the abdomen was occupied with a mass which pushed the intestines over to the left side.

Cystoscopic Examination.—Enough ether was administered to produce relaxation, so that a child's cystoscope could be introduced. The bladder capacity was 100 c.c. The inner

Fig. 2.—Kidney tumor showing the ureter.

surface of the bladder was of normal appearance. The ureteral orifices were large, and were normally situated. The left functioned, but the right did not. A No. 5 catheter was passed for a distance of 4 cm. up the right ureter, where it met an obstruction. No function was obtained, while the left could be seen to act more rapidly than normal. An effort was made to take a urogram, 7 c.c. of sodium bromid solution being injected. The roentgen ray showed the ureter to be well filled and its course abnormal. It passed from the right side upward, toward the left opposite the second lumbar vertebra on the left, thence upward and outward toward the right side. The pelvis of the kidney was crescent shaped, and lay more or less horizontally, opposite the twelfth dorsal vertebra. The large and small intestines were seen on the left side of the abdomen.

Laboratory Findings.—The urine was free from blood, albumin, pus cells and casts; the red blood count was 2,920,000; hemoglobin, 65 per cent.; white blood count, 9,800; differential count: polymorphonuclears, 70 per cent.; large mononuclears, 6 per cent.; small mononuclears, 22 per cent.; transitionals, 2 per cent. A blood smear showed nothing of note. The Wassermann reaction was negative.

The clinical diagnosis was cystic tumor of the right kidney, most probably sarcoma.

Operation.—A nephrectomy was done under local anesthesia (procain, 1:200). The tumor was so large that approach was made through the right rectus muscle by an incision extending from the costal margin to the pelvis. The muscles were separated, and the peritoneum was opened, exposing the tumor, which extended from the liver above and overlapped it, to the pelvis below and to the umbilicus medially. It was adherent above to the liver and gallbladder, medially, to the ascending colon, and at its lower pole, to the cecum and appendix. The adhesions were carefully freed, and the tumor was mobilized. But, as it was otherwise impossible to demonstrate the pedicle, the cyst was tapped, and about 100 c.c. of blood and gelatinous fluid was aspirated. The pedicle was then clamped and ligated. The wound was closed in layers, with a small rubber tissue drain inserted at the lower angle. The patient withstood the procedure quite well, showing marked shock only when the pedicle was being held tense.

Convalescence.—The postoperative course was uneventful save for slight superficial infection of the wound, which was controlled with mercurochrome-220 soluble. The skin separated, but the muscle sutures held. Although the child was markedly emaciated, and the transformation from breast to artificial feeding was in process, it gained weight, and was discharged in thirty-four days, completely cured. There was a bulging of the right side of the abdominal wall, as a result of weakness of the right rectus muscle, but there was no hernia. This bulging persisted for about six months. The child was seen recently, twelve months after operation. It now weighs four times the original weight, and is able to walk at the age of 13 months. So far as can be determined, there is no recurrence of the tumor.

The Tumor.—Grossly, the specimen was a cystic kidney, the size of a grapefruit. Section showed that it consisted of one large cyst, not connected with the pelvis, which was flattened, and extended along the side of the thin wall of the cyst. The ureter was of normal size and was patent. There was a very small amount of renal tissue, which extended along the pelvis and included the cyst wall. The cyst contained sanguineous fluid, organized blood clot, and grayish white, soft, friable tissue. There were also small areas of yellowish white tissue projecting from different portions of the cyst wall, the greater portion of the growth being opposite the pelvis, but not involving the cavity of the pelvis, which was normal, white and glistening. Several blocks were cut for histologic examination.

Microscopically, the thin wall of the cyst showed a simple fibrous wall, and in places a thin layer of kidney tissue presenting no other changes than that due to pressure. The tumor consisted of a dense mass of spindle shaped cells, which in most sections were densely packed together. In a few areas, the structure was more delicate, simulating a myxomatous tissue, with relatively long fusiform-like cells separated by a small amount of nonstaining intercellular stroma. The tumor cells were large and showed marked variation in size and shape, and in the chromatin of their nuclei. Many of the cells were deeply pyknotic. No typical mitotic figures were seen. There were occasional minute focal accumulations of brownish pigment. There was nothing to suggest a mixed tumor.

The pathologic diagnosis was congenital spindle cell sarcoma of the kidney.

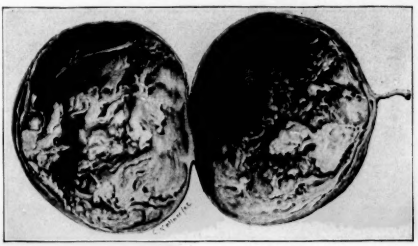


Fig. 3.—Kidney tumor: cross section.

COMMENT

The literature is not lacking in case reports of congenital sarcoma of the kidney, but one finds surprisingly few cases followed by cure. Morris,[1] Albarran and Imbert,[2] Rosenstein,[3] Kelynack [4] and Walker [5] discuss the subject thoroughly and correlate the clinical and operative data up to the year 1900; but since then there

1. Morris, H.: Diseases of the Kidney, 1886.
2. Albarran, J., and Imbert, L.: Les tumeurs du rein, Paris, 1903.
3. Rosenstein, Samuel: Pathologie und Therapie der Nierenkrankheiten, 1870.
4. Kelynack, T. N.: Edinburgh and London M. J., 1898.
5. Walker, S.: Sarcoma of Kidney, Ann. Surg. **26**, July, 1897.

have been only a few scattering references to single cases. Many of these do not indicate progress. Walker [5] presents the details of seventy-four cases, and shows, in an analysis of 138 cases, that congenital sarcoma is most commonly found between the first and the second year, when 19.5 per cent. occur. From 6 months to 1 year, 13 per cent.; under 6 months, 5 per cent.; at birth 6.5 per cent., and from the seventh to the eighth month of embryonic life, 2 per cent. are seen. The case here reported belongs to the group under 6 months, and the discussion will be limited to sarcomas appearing during the first six months and the first twelve months. Walker,[5] in his series of seventy-four cases, gives an account of two patients aged under 12 months—one, 11 months, who died two days after a nephrectomy, and one 6 months, who was operated on by Schmidt [6] successfully and remained well for four years. No cases are reported in detail below the sixth month. This condition must be more rare than reports would have us believe.

The causes for such tumor growth are hypothesized as: 1. Trauma, as there was a history of injury in thirty out of 142 cases. Rindfleisch sought to explain by "the injury done to the regulating nerve fibers thus permitting their abnormal growth." 2. Misplaced embryonic tissue (Cohnheim's theory). 3. Heredity, as a predisposing factor. 4. Stone as an irritating influence, which is seldom seen in adults and never in children. 5. Exanthems, especially scarlet fever. Infectious diseases are so common in children without the development of renal sarcoma that little credence can be placed here.

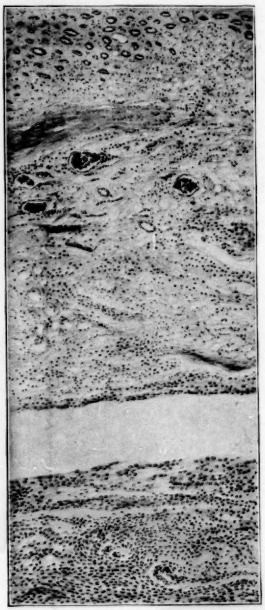


Fig. 4.—Section of kidney tumor showing junction of kidney and tumor tissues. (Low power.)

The diagnosis in many of the cases was delayed until several months after the onset of symptoms. Early diagnosis is the panacea for malignant conditions. Now that cystoscopy has been so perfected that ureteral catheterization and even pyelography are possible in infants both male and female, we may expect early diagnosis and better results. If there is any question of doubt about an abdominal mass being liver, kidney or something else, a diagnosis of the kidney lesion can be accurately determined so that we need no longer hesitate, "wondering what it is." So far as can be ascertained, my patient is the youngest male infant in whom a diagnosis of congenital sarcoma of the kidney has been made by the cystoscopic method. The cardinal symptoms of tumor, pain, hematuria and cachexia, although all present during some phase of the tumor development, were not obvious in many cases. Tumor, being the most prominent sign, was confused with enlarged liver. Secondary symptoms of pressure were common, especially those of pressure on the stomach, such as noted in the case here reported. There was no ascites, edema or varicocele, yet the superficial abdominal veins were prominent, indicating both pressure and collateral circulation.

Fig. 5.—Section of kidney tumor. (High power.)

The operative mortality is so appalling that operation seems almost inadvisable; but with the newer methods of anesthesia and with better knowledge of preoperative and postoperative difficulties, we should hear better reports following nephrectomies in children. In Walker's series of seventy-four cases, twenty-seven patients died of shock and hemorrhage. Eight in this group who were under 2 years of age died within four days. The anesthetic administered was ether or chloroform. Granting that children take general anesthetics well, it may be assumed that, since 38 per cent. died as a result of the operation, the anesthetic played a much greater part in the mortality than was thought. In my case, operation was performed under local anesthesia successfully; and only at one time did the infant show signs of shock, and that while the pedicle was being held tense. Drug stimulation was not necessary. Hypodermoclysis of 150 c.c. of physiologic sodium chlorid solution was given between the scapulae twice during the first twenty-four hours after operation. Fluid

6. Schmidt: München. med. Wchnschr. **39**: 256, 1892.

ingestion is just as important in infants as in adults, to allay shock and promote renal secretion.

Added to the appalling statistics of operative mortality are the discouraging end-results, due to recurrences and metastasis. Congenital sarcomas grow rapidly and prove fatal early. Walker reports that without operation these patients live 8.08 months, and with operation, 16.77 months. In his series of seventy-four cases, only one patient under 1 year was cured by operation, and only four under 14 years, a percentage of 5.47 cures. Recurrences took place in from three to eighteen months. No child under 2 years who died of recurrence lived longer than eleven months after the operation. Hence, it is fair to believe that, since my patient was only 29 days old when operated on, has gained four times its weight, has lived twelve months, and is in perfect health, without any signs of recurrence, a cure may be expected.

330 Cedar Street.

FRACTURE OF THE SPINE OF THE TIBIA

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NEW YORK

The condition with which we are concerned in this paper is one of rather extreme rarity. In reviewing the literature, it is difficult to find very much written on the subject. In all probability, the injury occurs more frequently than the records would indicate, as in the last six years I have seen two cases.

REPORT OF CASES

CASE 1.—In the fall of 1917, at Base Hospital No. 9, American Expeditionary Forces, a patient was brought in with a severe knee injury. He was about 19 years old, and while playing football was tackled round the knees and thrown to the ground. He experienced a severe twist in his knee as his body lunged, and when he attempted to get up the knee was found to be severely injured. Several hours after the accident he came under our observation, and at this time presented an extremely painful, swollen and discolored knee. There was extensive ecchymosis, heat, increased fluid, and almost complete limitation of motion. There was no marked lateral mobility. A roentgenogram (Fig. 1) showed a fracture of the upper end of the tibia in the knee joint with a fragment including the entire spine of the tibia, which was definitely separated but displaced upward very little. An ice bag was applied, and the leg elevated and immobilized with a posterior splint. Unfortunately, I was unable to see the patient later, as he was transferred after a short time to another hospital. I also regret that I have no records on this case except the roentgenogram. The foregoing notes are not complete, as they are merely from memory.

CASE 2.—J. H. V., aged 16, admitted to the Hospital for Ruptured and Crippled, Aug. 2, 1922, was tackled about the knees in November, 1921, while playing football, and thrown violently to the ground. As he fell he felt something snap in the left leg, and experienced sudden, severe pain in the knee. He was treated for a few days for a "sprained knee" by a lodge physician. For four months he was unable to use the leg, from that time had pain in the joint when stretching out the leg, and found the knee stiff after sitting for any length of time. Examination was negative except for the left knee. On walking there was a slight limp. There was no tenderness, redness, swelling, heat or discoloration. No lateral mobility was found, and flexion was normal, but extension was limited about 10 degrees. A roentgenogram (Fig. 2) taken at this time showed a fracture of the external tubercle of the spine of the tibia, with two small fragments detached but not much displaced. This picture, along with the limitation of complete extension, established the diagnosis.

August 3, a large, U-shaped incision through the skin and subcutaneous tissues was made about the patella, giving a flap with base upward, which was retracted. A longitudinal cut was then made through the center of the quadriceps tendon, the aponeurosis over the patella, and the patellar ligament. The patella was then split along this line with a chisel, and the fragments were retracted laterally. Most of the fat pad behind the patella was removed, and an excellent exposure of the joint was thus obtained. The spine of the tibia was found to be fractured, just as one would expect after seeing the roentgenogram. The small bone fragments were embedded in fibrous tissue, and in this way attached to the tibia. The crucial ligaments were seen posterior to the fracture, and appeared normal, as did all other structures in the joint. Moving the knee demonstrated that this mass became

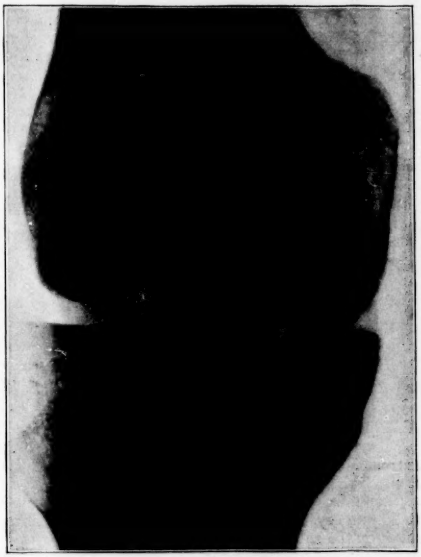

Fig. 1 (Case 1).—Fracture of upper end of tibia in the knee joint, with the fragment including the spine of the tibia.

jammed between the femur and tibia and prevented extension beyond 170 degrees. The mass of fibrous tissue, including the bone fragments, was excised, and full extension was then possible. The fragments of the patella were allowed to go back in place, and the longitudinal incision was closed with three chromic and several plain catgut interrupted sutures. The patella was not sutured. The skin incision was closed with continuous plain catgut sutures. An alcohol dressing was applied and a tight muslin bandage from toes to groin, with the leg extended and the foot elevated.

There was no unusual reaction after the operation, and the wound healed by primary union. Active motion was instituted immediately, and walking was begun on the tenth day. At this time motion was painless and was free from 90 degrees to 170 degrees. The patient left the hospital on the eighteenth day with normal function. The patient was seen two months later and again five months after operation, and at both times walked without a limp, had normal motion, and stated that he had had no discomfort of any kind. A roentgenogram taken after the operation merely showed that the fragments of the tibial spine had been removed

COMMENT

This case may be considered solely a fracture of the spine of the tibia. In the majority of cases there is some injury to the crucial ligaments. If this case had been seen early, I believe that the conservative treatment of rest and immobilization would have been tried; but from the findings at operation it was certainly proved that there would always have been limitation of complete extension, and discomfort due to the jamming of the mass between the femur and tibia.

Fracture of the spine of the tibia has never received much consideration, although some of the cases referred to by Fosdick Jones [1] date back prior to 1873. The first operation was performed by J. Hogarth Pringle, and reported by him in 1907. The best account of the lesion was by Sir Robert Jones [2] in 1913, when he reported a group of seventeen cases of injury to the spine and crucial ligaments. Fosdick Jones mentioned these and nine other cases, and also reported seven cases from Denver. This total of thirty-three cases up to this time has led to the belief that the condition is

Fig. 2 (Case 2).—Anteroposterior view showing two fragments of external tubercle of spine of tibia.

extremely rare, but I rather think this is a false impression. So far it has apparently not been considered of sufficient frequency to be noted in textbooks of orthopedic surgery or fractures, as I was unable to learn much on the subject from such sources.

The cause of this lesion is always some severe traumatism, usually something that holds the leg and causes the body to twist violently with the strain at the knee joint. It is associated so frequently with rupture of the crucial ligaments that it more or less makes us consider the two together. In most cases of fracture there is a rupture of one or both crucial ligaments or else a severe injury with torn lateral ligaments and fracture of the tuberosities of the tibia when the spine fracture is really of secondary importance.

The mechanism involved in this fracture may be one of two types. The spine may be broken off by impingement of a femoral condyle, most likely the external margin of the internal condyle, directly on the tibial spine. Freiberg [3] lays considerable stress on the proximity of these two structures, and shows how the spine may injure the condyle in the condition with which he deals. The other possibility, and to me the most likely mechanism, is that in a twisting injury the strain is brought on one or both of the crucial ligaments, and if they do not rupture they tend to damage the bone at their insertion. Sir Robert Jones refers to this type as an "avulsion." A very unusual case was reported by Kahle [4] of fracture of the internal condyle of the femur by pull of the posterior crucial ligament. In this case the fracture occurred at the upper end of the ligament rather than at its insertion into the tibia. In fractures about the ankle we see fragments of the internal or external malleolus which have been pulled off by the lateral ligaments, showing that the ligaments often can stand more strain than the bone near their insertion. This I consider a parallel condition to our present one.

If cases are seen early, the diagnosis may be made in severe injuries of the knee with signs of pain, tenderness, swelling, limitation of motion, particularly complete extension, and with lateral mobility in some of the cases. When seen late, as in the second case here reported, there may be only slight blocking of full extension, and some discomfort. The diagnosis can really be definitely made only by roentgen-ray examination.

The treatment should be conservative, with ice bag, rest and immobilization, even for many weeks if the patients are seen soon after injury. In the late cases this treatment may be tried, but I believe that operation is most always necessary. If the crucial ligaments are ruptured, they will generally become repaired by the conservative treatment; but in rare cases it may be necessary to suture or reconstruct them.

The operation is best accomplished through a split-patella route, as advocated by Jones.[5] This gives excellent exposure, and does not lead to any ill effects on the structure of the joint.

From the scanty literature, we must assume that the ultimate result in all cases is very satisfactory, as no unsuccessful cases have been reported.

CONCLUSIONS

1. Fracture of the spine of the tibia is a rather unusual condition, but not so rare as one would assume from reviewing the records.

2. It is due to a severe traumatism, usually of the twisting variety.

3. Rupture of the crucial ligaments is a frequently associated lesion, and is probably due to pull by these ligaments.

4. Diagnosis is difficult without the roentgen ray.

5. Conservative treatment is usually successful in recent cases, and occasionally in old cases.

6. In old cases, particularly with blocking of extension, operation is indicated.

7. Operation through a split-patella incision is the best, and removal of the offending fragments is very easy.

8. The final results are excellent in all cases; for, if the conservative treatment does not give a perfect recovery, operation will accomplish this end.

119 West Fifty-Eighth Street.

1. Jones, S. F.: Colorado Med. **17**: 217 (Aug.) 1920.
2. Jones, Robert, and Smith, S. A.: Brit. J. Surg. **1**, No. 1, 1913.
3. Freiberg, A. H.: Osteochondritis Dissecans, J. Bone & Joint Surg., January, 1923.
4. Kahle, R. R.: Knee Block from Avulsion of Bone Fragment by Posterior Crucial Ligament, J. A. M. A. **67**: 33 (July 1) 1916.
5. Jones, Robert: Notes on Military Orthopedics, 1917.

Value of Pasteur's Discovery.—Huxley estimated that the money value of Pasteur's vaccination treatment was sufficient to cover the war indemnity paid by France to Germany in 1879.

APPLICATION OF SWIMMING POOL SANITATION TO THE PUBLIC BATHING BEACH *

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WASHINGTON, D. C.

The approved sanitation of swimming pools requires attention to certain details of construction, treatment of water used and regulations for the bathers entering the pool. Pools constructed with smooth or glazed walls and rounded corners lend themselves to easy cleansing. An overflow gutter about the edge serves to skim off floating débris and acts as a cuspidor for the bathers. The desire for some active disinfectant within the water itself has made the addition of chemical substances more popular than either ozone or ultraviolet ray treatment, both of which sterlize the water outside the pool. Chlorin is the disinfectant of choice because of its ease of application, either as chlorinated lime or as liquid chlorin, because of its high germicidal property and its low cost. Bathers are usually required to take a complete shower bath with soap before entering the pool, and those suffering from any infectious disease are excluded.

Commonly the pools are of two types: the "fill and draw" pool that is cleaned out and refilled at stated intervals, and the "constant refiltration type," in which the water circulates continuously through certain treatment devices outside the pool, the water being used over and over again.

The nature and source of the water being the same as that supplied to the community for drinking purposes, it is apparent that its control and treatment in

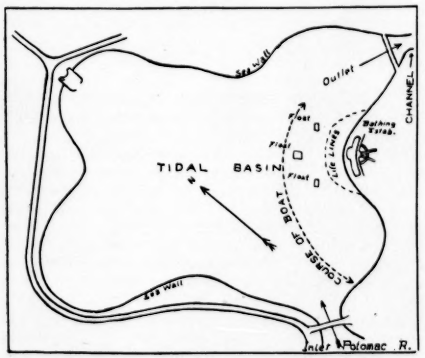


Fig. 1.—Situation of Tidal Basin and route of Chloroboat.

swimming pools aim to prevent the spread of communicable disease from one person to another, by disease germs introduced into the water by carriers of such organisms. A disease virus being liberated into the water by one bather might infect another bather if the germicidal property of the chemical in the water was not sufficient to destroy it. Such infections as the typhoids, dysentery, diphtheria, tuberculosis, common colds, streptococcus infections, conjunctivitis, skin infections, vulvovaginitis and some protozoal infestations are susceptible of being transmitted in this manner.[1]

The bathing beach on the shore of a lake, river or ocean is not commonly suspected of assuming a rôle in the transmission of these infectious diseases. The reason for this supposed freedom from danger lies in the enormous dilution at once apparent. However, aside from the possible transmission of disease from an infected bather to a susceptible one, the problem of infectious disease arising from water polluted by sewage is becoming more important at the bathing beaches near all large cities. Even when domestic sewage

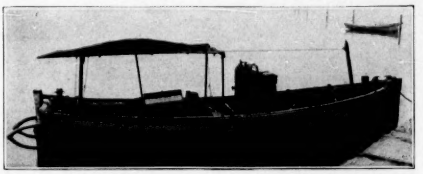


Fig. 2.—Chloroboat; engine in bow of boat forces water through the chlorination device, the treated water being reintroduced at the stern of the boat through a double hose which extends 3 feet below the surface.

passes through a disposal plant, there is still danger of pollution by the fluid effluent from it. The chemical engineer's statement that he is discharging an "effluent which is clear," of "high relative stability," "nonputrescible," and containing an "optimum dissolved oxygen content" cannot be accepted by the sanitarian as proof that this water is not dangerously polluted with disease producing micro-organisms.

For example, such a clear, chemically satisfactory effluent from the modern sewage disposal plant at Baltimore contains more than 250,000 bacteria for each cubic centimeter, with a high percentage of acid formers (presumptive *B. coli*). Sedimentation, storage, digestion, filtration and aeration have removed the putrescible organic content, but the bacteria contained in the sewage may have largely passed through. Successful chemical disinfection of raw sewage, or the liquid effluent from disposal plants, has been successfully carried out by several municipalities. Here again chlorin seems to be the disinfectant of choice.

TIDAL BASIN IN WASHINGTON

In Washington, D. C., the public bathing beach is located on the shore of an artificial lake, called the Tidal Basin (Fig. 1). At high tide this basin contains approximately 323,000,000 gallons of water, and is 110 acres in area and 9 feet deep. It connects with, and obtains its water from the Potomac River; a tidal gain and loss equivalent to about one fifth of the volume of the basin occurs twice daily. By means of automatic gates, water enters with the incoming tide from the Potomac River and discharges at ebb tide into the Washington Channel.

Sewage from the city of Washington, with a population of 467,000, is disposed of untreated by pumping it into midstream of the Potomac River, 2½ miles below the bathing beach. Water within the Tidal Basin is highly polluted with this sewage, as is apparent by chemical and bacteriologic analyses.

* From the Laboratory Division, Army Medical School, and Office of U. S. Public Buildings and Grounds.

1. It is theoretically possible that certain helminth diseases are also transmissible in this way.

CHLORINATION OF TIDAL BASIN WATER

To overcome this condition, the U. S. Army engineer officer in charge of United States public buildings and grounds has attempted chlorination of the water within the basin. At first the Potomac River water was chlorinated at the entrance gates. This showed a beneficial effect on the water within the basin; but from the bacteriologic point of view it was not wholly satisfactory. In an attempt to attain greater safety by treating the beach water more directly and continuously, a chlorinating apparatus was mounted on a motor boat which could closely circuit the beach, especially during bathing hours, and thus treat this water more directly.

A standard United States Navy motor boat was equipped with a dual M. S. V. pedestal type of chlorin control apparatus. This is a recently developed apparatus, is extremely simple and rugged, and is well adapted to the rough handling and vibration of a small open boat. A high speed four-cylinder gasoline motor connected with a centrifugal pump is mounted in the bow of the boat. The water pressure is maintained within desired limits by regulating the speed of this

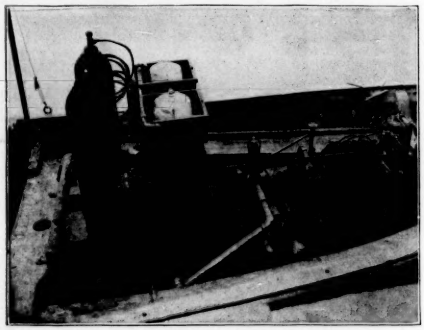


Fig. 3.—Chlorin control apparatus and water pump.

engine, and thus also the rate at which chlorin gas is admitted to, and absorbed by, the water in the vacuum bell jar. Between 600 and 800 pounds of liquid chlorin is introduced daily, chlorination being started one hour before bathers are admitted to the water and continued throughout the bathing period. An attempt is made to maintain a residual chlorin content of between 0.02 and 0.5 part per million in the beach water.

There are two operators in the boat; one, the pilot, attends to the marine engine; the other operates the chlorin apparatus and water pumping engine. The latter man makes frequent rough qualitative tests for free excess chlorin in the water by taking a 50 c.c. Nessler tube of water and comparing the color developed by the addition of 0.5 c.c. of orthotolidin solution with that of prepared standards. The proximity of the boat to the beach and the speed of chlorin introduction are governed by these simple analyses.

During the past season, daily quantitative tests for residual chlorin and complete bacteriologic analysis of beach water were carried out in the laboratories of the Army Medical School. Samples for these tests were collected independently at different hours each day, and at different places and depths within the life lines on the beach. They have shown a residual of chlorin varying between 0.01 and 0.8 part per million, the average sample showing about 0.2 part per million. The bacteriologic analyses have been particularly satisfactory. From a total count of more than 175,000 bacteria for each cubic centimeter contained in the water entering from the Potomac River, chlorination has caused

Table 1.—*Sanitary Chemical Analysis (Parts per Million) of Water Entering from Potomac River (Average of Several Determinations)**

Odor	None
Color	25
Turbidity	Very slight
Total solids	115
Ignition	Slight charring
Alkalinity as calcium carbonate	125
Cl as chlorids	15
N as nitrates	None
N as nitrites	0.008
Sulphates as sulphuric acid	None
Oxygen consumed	5
Free ammonia	0.026
Albuminoid ammonia	0.035
Temporary hardness as calcium carbonate	65
Permanent hardness as calcium sulphate	95
Iron	0.5

* Standard Methods of Water Analysis, American Public Health Association, 1920.

a reduction to an average of less than 100 bacteria for each cubic centimeter; the *B. coli* in untreated water from 500 for each cubic centimeter to its occasional presence in two or three of five 10 c.c. portions. It has been noticed that anaerobic lactose fermenters are not affected by chlorin of this concentration. These organisms belong to the *Clostridium welchii* group.

Table 2.—*Bacteriologic Analysis of Untreated Potomac River Water**

Total count	175,000 per c.c.
Total red colonies on lactose plate	500 per c.c.
Lactose broth fermentation	+ in 0.1 c.c.
Bacillus coli confirmed	+

* Standard Methods of Water Analysis, American Public Health Association, 1920.

RESULTS OF BATHING BEACH SANITATION

Several hundred thousand persons bathe at this beach each season, and no water-borne infections traceable to such bathing have occurred during the last two seasons. No objection to the chlorin in the water has been made by the bathers. If the concentration of free chlorin is kept below 0.5 part per million, its presence is not even detectable by the average bather. Life guards who have been in the water more or less every day for two seasons have shown no irritation of the skin or mucous membranes.

Table 3.—*Bacteriologic Analysis of Water on Bathing Beach**

Total count	100 per c.c.
Total red colonies on lactose plate	4 per c.c.
Lactose broth fermentation	± in 10 c.c.
Bacillus coli confirmed	±

* Standard Methods of Water Analysis, American Public Health Association, 1920.

Regulations at this beach exclude persons suffering from contagious diseases. While such a regulation seems desirable, its strict enforcement does not seem practicable when applied to the general public. The same may be said of the shower bath preliminary to entering the beach. The question of expectoration and cleansing of the nostrils while bathing seems more

serious, and yet 90 per cent. of all bathers do this frequently and quite unconsciously.

It is thought that this chlorin treatment takes care of any ordinary soiling of the water by infected bathers along with the destruction of bacteria from the constant sewage pollution, and that its continuance represents a cheap insurance against water-borne epidemics.

PRIMARY CARCINOMA OF THE LIVER*

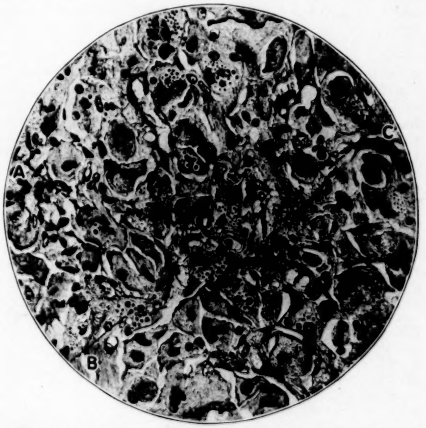
B. J. CLAWSON, M.D.
AND
V. S. CABOT, M.D.
MINNEAPOLIS

Data concerning primary carcinoma of the liver previous to 1870 are apparently not to be relied on, as primary and metastatic carcinomas were not well differentiated. The many writers reporting primary carcinoma of the liver agree that it is rare. In 1890, von Hansemann[1] gave a report of 258 cases of malignant epithelial tumors of the liver, four of which were primary. Goldzieher and von Bokay,[2] in a series of 6,000 necropsies, found eighteen definite primary carcinomas. Eggels,[3] in his review of the literature up to 1901, reported 163. Karsner[4] reviewed the literature up to 1911, and reported nine cases coming under his observation. Winternitz[5] summarized the reports up to 1916, and decided that primary carcinoma of the liver occurred in from 0.028 to 0.3 per cent. of all necropsies. In a series of 3,700 postmortem examinations at the Johns Hopkins Hospital, he found three cases. Many scattered individual cases have been reported since 1916. In general, these reports agree with those previously given. In the 5,100 necropsy reports at the University of Minnesota there is but one primary liver carcinoma—the one reported in this paper.

This condition has been found at practically all ages. Griffith[6] compiled fifty-seven cases in children ranging in age from 1 year to 16 years. Wollstein and Mixsell[7] reported a case in a child of 4 months. Dansie[8] compiled twenty-three cases in children under 2¼ years of age. In the cases reported by Eggels[3] and Yamagiwa[9] the majority were found in the sixth and seventh decades. Karsner[4] concluded that primary carcinoma of the liver was more frequent in men than in women, and occurred most frequently in the fifth and sixth decades.

A relationship seems to exist between cirrhosis of the liver and primary carcinoma. Karsner agreed with most of the reports in stating that cirrhosis was present in almost all cases. In 107 cases reviewed by Winternitz, cirrhosis was present in 87 per cent. Pirie[10] emphasized the significance of cirrhosis as a predisposing factor in the relatively large number of primary carcinomas of the liver in the natives of Africa, and suggested that schistosomiasis might be the cause, since this has been shown experimentally to be a cause of cirrhosis of the liver. The frequency of cirrhosis is greater in the liver cell type than in the intrahepatic bile duct cell type. Both Winternitz and Karsner are convinced that these tumors are unicentric in their development.

The liver cell carcinomas, according to Ewing,[11] fall into three anatomic groups: the primary massive liver cell carcinoma, the multiple liver cell carcinoma, and the carcinomatous cirrhosis. The first occurs as a single yellowish friable mass in either or both lobes, but mostly in the right. Commonly, several smaller secondary tumors are present in the liver. Both primary and secondary tumors tend to become soft, necrotic and hemorrhagic. The blood and bile color makes them resemble the melanoma from which they



Section of tumor from pancreas, reduced from a drawing × 325: *A*, multinucleated cell; *B*, bile pigment; *C*, capillary.

must be differentiated. A more or less wide variation in histologic structure exists, yet there is always a close resemblance to liver cells in morphology and staining properties. The cellular arrangement may be in cords closely resembling liver cell cords, in adenomatous clusters, or all order of cell arrangement may be lost and the cells may assume a diffuse irregular arrangement. The second gross type or the multiple liver cell carcinoma differs from the solitary type by the presence of many tumor nodules throughout the liver, none of which are more definitely primary than the others. The third group shows a diffuse arrangement in a diffusely cirrhotic liver. The individual cells in all these types vary in size and shape and are acidophilic, with large or small, irregular, hyperchromatic or hypochromatic nuclei in which frequent mitotic figures are present. Giant cells and multinucleated cells are frequent. Bile is commonly but not always found in the tumor cells.

Extrahepatic metastasis is not uncommon. Metastasis into adjacent parts, such as the periportal, pancreatic and retroperitoneal lymph nodes, frequently

* From the Department of Pathology, University of Minnesota Medical School.

1. Von Hansemann: Ueber den primären Krebs der Leber, Berl. klin. Wchnschr. **27**: 353, 1890.
2. Goldzieher und von Bokay: Der primäre Leber Krebs, Virchows Arch. f. path. Anat. **203**: 75, 1910.
3. Eggels: Ueber das primäre Karzinom der Leber, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **30**: 506, 1901.
4. Karsner, H. T.: A Clinicopathological Study of Primary Carcinoma of the Liver, Arch. Int. Med. **8**: 238 (Aug.) 1911.
5. Winternitz: Primary Carcinoma of the Liver, Johns Hopkins Hosp. Rep. **17**: 143, 1916.
6. Griffith, J. P. C.: Primary Carcinoma of the Liver in Childhood, Am. J. M. Sc. **155**: 79 (Jan.) 1918.
7. Wollstein, M., and Mixsell, H. R.: A Case of Hepatoma in an Infant, Arch. Pediat. **36**: 268 (May) 1919.
8. Dansie, C. B.: Primary Malignant Growth of the Liver in Infants, Lancet **2**: 228 (July 29) 1922.
9. Yamagiwa: Zur Kenntniss des primären parenchymatösen Leberkarcinom (Hepatoma), Virchows Arch. f. path. Anat. **206**: 437, 1911.
10. Pirie, J. H. H.: Hepatic Carcinoma in Natives of Africa and Its Frequent Association with Schistosomiasis, M. J. South Africa **17**: 87, 1921.
11. Ewing: Neoplastic Diseases, Ed. 2, p. 682.

occurs. Metastasis into other parts of the liver is common. Catsaras [12] reported a case in which there was metastasis into the head and neck of the right femur. The lungs are a common site in general metastasis. In Eggels' series of 163 cases, definite metastasis occurred in 66 per cent.

REPORT OF CASE

A white man, aged 22, was always well until the summer of 1921, when he had several periods of suffering from epigastric pain and nausea, each period lasting three or four days. In March and April, 1922, he had similar attacks. About the last of May, 1922, he began having persistent epigastric pain, which continued until his death, Oct. 30, 1922. The sclera first became icteric, June 22, 1922. A mass was palpated in the liver immediately below the costal margin. The urine contained bile. The blood contained 4,900,000 erythrocytes and 9,100 leukocytes. The blood Wassermann reaction was negative at all determinations. July 8, 1922, the abdomen was explored. About 100 c.c. of a yellow, serous fluid was found in the peritoneal cavity. The liver was studded with many yellowish masses varying in size from 1 m. to 1.5 cm. The gallbladder was thickened and matted in a mass involving the cystic and hepatic ducts. A diagnosis of inoperable carcinoma was made. The patient made a good recovery from the operation, but his condition grew worse with an increasing icterus until death occurred.

A necropsy limited to the abdomen was made on the day of death. The body was poorly nourished, and a marked icterus was present. There was no ascites. The liver extended 10 cm. below the costal margin, and was much enlarged. A large, whitish, hard nodule was present in the right lobe. Numerous smaller, greenish white nodules were scattered over the surface of the liver. On section, a large tumor mass was seen to accupy most of the right lobe and part of the left. The mass was greenish red to white, was firm, and grossly resembled a melanoma (a tumor from which bile stained hepatomas must be differentiated). Several other similar smaller masses were scattered through the liver. The gallbladder was thickened, and was studded with many tumor nodules. Bile could not be expressed from the common bile duct. An involved lymph node was pushed into the lumen of the hepatic duct. The lymph nodes about the pancreas and bile ducts, and those in the retroperitoneal region were greatly enlarged and similar in appearance to the tumor in the liver. A tumor mass was present in the pancreas which was similar in appearance and consistency to the tumor in the liver.

Histologically, in the uninvolved liver a considerable amount of cirrhosis was present. In the area near to the tumor mass, scattered here and there, were typical solitary tumor cells which showed large irregular hyperchromatic nuclei often containing mitotic figures. Giant cells were present. There were also many lymphocytes and polymorphonuclear leukocytes in the cirrhotic areas. The cirrhosis was more or less diffusely distributed, but the bulk of it was in close relation to the periphery of the lobules. In the tumor mass, connective tissue trabeculae extended irregularly through areas of the tumor. A few bile ducts were present. There was no attempt to form lobules. Many capillaries were found throughout the tumor. The tumor cells were arranged mostly in cords of single cells, which branched and anastomosed. Some areas were adenomatous in appearance, but the large part of the tumor showed a diffuse, irregular grouping of the tumor cells. Large multinuclear cells and giant cells were numerous. The individual cells varied greatly in size. Some nuclei were hyperchromatic, while others were hypochromatic. Many mitotic figures were present. Many of the cells were darkly stained with bile pigment, which was removed from sections by treating with chloroform. This pigment can also be removed by soaking sections for a short time in a 10 per cent. solution of sodium hydroxid. This does not differentiate the pigment from melanin, for some melanins are soluble in alkaline solutions. Sections of a melanotic tumor were treated with chloroform, but the melanin was not affected. The structure of the metastatic nodules in the pancreas and lymph nodes was similar to that of the large tumor in the liver, except that no bile ducts were found.

This tumor seems to be an example of the massive solitary liver cell carcinoma. It is similar to most of the previously described liver cell carcinomas in structure, in being associated with cirrhosis, and in producing metastasis into adjacent parts.

12. Catsaras: Liver Cancer with Metastasis in Bones, Ann. de méd. **10**: 295, 1921.

TRYPANOSOMA CRUZI IN THE TISSUES OF THE ARMADILLO *

BOWMAN CORNING CROWELL, M.D.
CHARLESTON, S. C.

In 1912, Chagas [1] reported finding *Trypanosoma cruzi* in the hind gut of *Triatoma geniculata*, which was collected in the burrows of the armadillo (*Tatusia novemcincta*) in the zone in which American trypanosomiasis is endemic. Following this he found the trypanosomes in the blood of the armadillo, from which he was able to infect guinea-pigs, and these presented all the phenomena of parasitization by *Trypanosoma cruzi*. Since then the trypanosome has been found in

Fig. 1.—Section of heart of armadillo (infested with Trypanosoma cruzi), showing perivascular infiltration with mononuclear cells.

the blood of the armadillo in places far removed from human habitations.

From these findings Chagas concluded that the armadillo is the vertebrate reservior of *Trypanosoma cruzi*. The trypanosome of the armadillo is carried by *Triatoma geniculata*, which accidentally frequents human residences, infecting human beings; and the

* This work was done at the Oswaldo Cruz Institute, Rio de Janeiro.
1. Chagas, C.: Brazil-med., 1912, No. 30.

human infection is carried on by *Triatoma megista*. *Triatoma infestans* and *Triatoma sordida* have also been found infected, and Chagas concluded that several kinds of blood-sucking insects may act as hosts to the trypanosomes of vertebrates. He further referred to the possibility that this is a case in which the parasite of a wild animal may adapt itself to the human organism and carry an infection, or, vice versa, that a disease-

Fig. 2.—Section of heart of armadillo showing parasitization of muscle fiber by T. cruzi.

producing parasite of man may adapt itself to a wild animal, perhaps without pathogenic action.

Trypanosoma cruzi has also been found in domestic animals, such as the cat and dog, in households heavily infested by *Triatoma megista*, which is generally recognized as the chief transmitter of the human disease.

Up to the present time, the parasite has not been demonstrated in the tissues of the armadillo, nor have lesions attributable to it been described in this animal.

I have recently had the opportunity of examining an armadillo that was brought to the Oswaldo Cruz Institute from Lassance, the center of the endemic zone of Chagas' disease. This armadillo was captured in the wild state and presented a spontaneous infestation with trypanosomes. These trypanosomes were numerous in the peripheral blood, were morphologically identical with *Trypanosoma cruzi*, and infection experiments on guinea-pigs have proved their identity with that parasite.

This armadillo I killed with chloroform, and performed a necropsy at once. The gross necropsy findings were not striking, other than the presence of a hemopericardium due to cardiac puncture performed to withdraw blood for inoculation of the guinea-pigs.

Examination of the heart of this armadillo has shown the presence of lesions of the myocardium, which will be described and illustrated in detail, and parasitization of the cardiac muscle fibers. An interesting finding was the presence of a parasitic thrombus in a small artery in the myocardium, this thrombus being literally filled with *Trypanosoma cruzi*. The trypanosome in this heart assumes the same rounded, leishmania-like form that it does in the human cases. The trypanosomes were rare in the sections that have been studied, thus presenting an analogy with the chronic cardiac human cases.

Neither lesions of the myocardium nor parasites were found in sections taken from the apex of the heart. Further sections taken from the region of the auriculoventricular sulcus showed a marked infiltration of the type that I have come to consider characteristic of the trypanosome infection. Thus encouraged in the search for parasites, I was soon able to demonstrate them as illustrated. The infiltration is almost exclusively of the mononuclear type of cells, occurring in small groups scattered about the vessels and between the muscle fibers. In some cases the accumulations of cells form veritable cuffs about the vessels, of a thickness of from seven to ten layers of cells. Between the muscle fibers there are seen strands of these cells, and there is also a considerable multiplication of the nuclei of the muscle fibers. Fibrosis is not present except to a very slight extent just beneath the epicardium. This lesion is similar in many respects to that encountered in human syphilis, and is identical with that found in human trypanosomiasis. The lesion has not been described as a characteristic of trypanosome infections in the heart when the infection is with other trypanosomes than

Fig. 3.—Section of heart of armadillo showing T. cruzi within a thrombus.

Trypanosoma cruzi, but I have abundant material showing that it is a characteristic of this infection, and forms one of the best criteria for the diagnosis of the disease.

The parasitized fiber that is illustrated, when seen in one plane, shows approximately fifteen of the trypanosomes, in some of which all the features of this form of the trypanosome can be seen. In the region of this fiber there is a considerable infiltration between the muscle fibers, but the fiber itself does not appear to

have undergone regressive changes. On the contrary, it appears somewhat broader than the neighboring fibers.

The other organs of this armadillo showed no discoverable histologic lesions that could be attributed to the parasitization.

This finding of the parasite and lesions attributable to its presence in the heart of the armadillo is of significance in showing that the trypanosome is essentially a histoparasite in all animals examined, and that it is pathogenic for the armadillo, although this pathogenicity may be slight.

CALCIFICATION OF THE OVARY

REPORT OF CASE

T. C. BOST, M.D.
CHARLOTTE, N. C.

This case is reported because of its interest and because of the rare occurrence of the condition. Moschcowitz [1] in 1916 compiled five cases and made a pathologic study of the specimens. Dicken [2] has since reported another case. The case here reported brings the total to seven. The specimen is the largest on record.

In this group of studied cases, two specimens contained osseous tissue in addition to calcium. They all were of stonelike consistency, with no ovarian tissue present. This does not include the cases in which there were mere deposits of lime in the ovary, which have occasionally been observed by the pathologist and also by the surgeon at the time of operation.

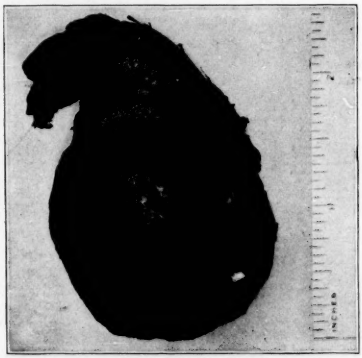


Fig. 1.—Specimen as removed, with fallopian tube attached (actual size).

REPORT OF CASE

History.—B. M., aged 38, married, with one son, aged 16, gave a negative family history, and previous personal history which had no bearing on the case up to the age of puberty. The menses began at 14, were fairly regular and normal for about ten years, and then gradually became very irregular, with menorrhagia and metrorrhagia and severe attacks of cramplike pain in the back and lower abdomen. These grew more frequent and progressively worse, especially as to pain in the back, radiating down the left leg. Also the irregular bleeding became more marked. There were no miscarriages.

Examination.—The general appearance was somewhat anemic, but the patient was well developed and rather obese. There was a slight tenderness over the lower abdomen, and a very hard irregular mass with limited mobility was palpable above the pubes. On pelvic examination, two lateral masses could be made out in addition. All were only slightly movable, with slight tenderness. There was a slight bloody discharge with no characteristic odor. The cervix was apparently normal. Urinalysis revealed nothing abnormal. The leukocyte count was 9,000; red blood count, 3,900,000; hemoglobin, 80 per cent. Wassermann reaction was negative. The preoperative diagnosis was fibromyoma of the uterus and ovarian cyst.

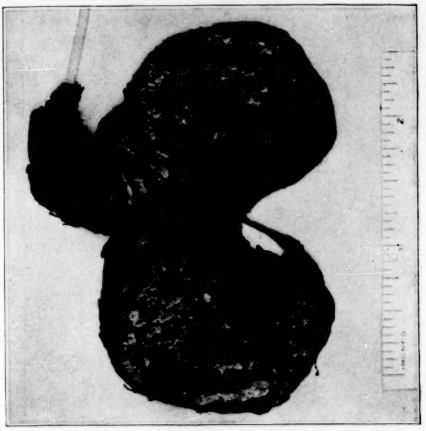


Fig. 2.—Specimen sawed open with probe inserted in tube.

Operation and Result.—The uterus contained a large multiple fibroid about the size of a half-gallon measure; the right ovary was degenerated into a cyst about the size of a small orange, and the left ovary was of stonelike hardness and about the size of a hen's egg. All were involved in very dense adhesions, evidently of long standing. Panhysterectomy was done. The patient made a good recovery and returned home in two weeks. I have recently heard from the patient and from her physician that she has been completely relieved, and is in good health two years after operation.

Pathologic Report (by Dr. Eli Moschcowitz).—The specimen consisted of a mass measuring 4.75 by 3.75 by 3 cm., apparently occupying the site of the ovary. A normal fallopian tube was attached to the upper surface of it. The mass, which was long and hard, with a surface rough and shaggy, was slightly uneven, but the general shape was that of a flattened egg. On section, the mass was found to consist of a very dense calcified structure covered by a very thin fibrous capsule. The lower surface of the mass resembled bone in structure, consistency and color. The surface was comparatively smooth and mottled yellow. No soft tissue was noted in any portion. The tissue appeared of uniform bony hardness.

Microscopic Structure: There was uniform calcification of a comparatively dense hyaline connective tissue matrix. The lime was deposited in various sized irregular masses, many of which are confluent. The masses were irregular in outline. The edges appeared scalloped or crenated, and the deposition of lime followed the structure of the connective tissue matrix, so that it appeared spongy and even vacuolated. Sometimes the lime had been deposited in a larger connective tissue space, so that it appeared encapsulated. In places, the lime deposit did not quite fit the enclosing capsule, so that there

1. Moschcowitz, Eli: Bull. Johns Hopkins Hosp. **27**: 71 (March) 1916.
2. Dicken, W. E.: J. Oklahoma M. A. **9**: 107 (May) 1916.

was a space between the outer margin of the lime deposit and the capsule. This space sometimes contained a granular débris; at other times, the lime deposit contained a central cavity, which was empty or contained the lime granular débris. The connective tissue framework was practically acellular and contained few and isolated blood vessels. In no portion was any formation of osseous tissue noted. The diagnosis was calcification of the ovary.

COMMENT

Calcification has been described as occurring in various body tissues. It is not a very uncommon pathologic phenomenon.

In the instances in which this process has been studied, it has been observed that it occurs only in areas of tissue that are dead or inert; for instance, necrotic areas due to caseation or coagulation necrosis, tuberculous glands, pleuritic thickenings, atheromatous plaques, heart valves in the circulatory system, thyroid glands, various kinds of tumors, notably fibromyoma, and walls of various kinds of cysts, walls of long standing hernial sacs, long retained dead fetuses and old scars from traumatic wounds.

Thus, it is observed that calcification possesses a peculiar predilection for connective tissue structures that have undergone sclerotic or hyaline degeneration, which, owing to their complete lack of blood vessels, can justly be regarded as inert tissue. The corpora albicantia can be cited as examples. Moschcowitz, in his study of specimens collected, showed that discrete deposits of lime were made within the hyaline connective tissue matrix, in the corpus albicans as a base, and that these deposits coalesce and form a solid amorphous calcareous mass. This being true, it is

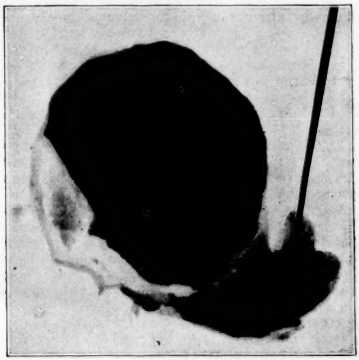


Fig. 3.—Roentgenogram of specimen, showing density as compared with steel probe.

quite possible to conceive of this sequence of events. Yet, with the highly specialized function of the ovary, with its many cycles and with a degenerating hyaline connective tissue matrix resulting each time, it is surprising that lime is not more frequently deposited. With such a deposit, it is not so easy to understand why it enlarges to many times the size of the ovary itself, as in the case here cited.

In the cases which go on to the formation of osseous tissue, Moschcowitz has pointed out that the process is entirely analogous to physiologic endochondral ossification, the difference being that, instead of being cartilage, the matrix is hyaline connective tissue infiltrated with lime. In each instance, the corpus albicans was involved and four distinct stages were recognized: (1) an early discrete multiple deposit within a healed corpus luteum; (2) a definitely circumscribed deposit of amorphous lime within a corpus albicans; (3) the formation of primary haversian canals, and (4) true bone formation.

Calcification occurs only in dead tissue, and ossification occurs only after a preliminary calcification.

Medical Building.

Clinical Notes, Suggestions, and New Instruments

A CASE OF ECTOPIC PREGNANCY AT TERM WITH LIVING CHILD

B. J. O'NEILL, B.S., M.D., AND W. W. CRAWFORD, M.D.,
SAN DIEGO, CALIF.

History.—Mrs. B., aged 39, born in Denmark, who had been married thirteen years and had never before been pregnant, was seen, April 4, 1922, when suffering from influenza.

Examinations.—Routine examination revealed a pregnancy of about six months. The patient gave a history of regular menstruation up to about six months before, and thought the cessation was due to change of life. She had not noticed any increase in size of the abdomen, and gave no history of nausea or of quickening.

June 6, she was again seen, and a diagnosis of pregnancy of about seven months was made. The heart and lungs were normal; the pelvic measurements were adequate, and the fetal heart tones were clear and distinct to the left of the umbilicus. The urine showed a small ring of albumin and a few casts. The blood pressure was: systolic, 140; diastolic, 90; and there was some edema of the feet and ankles. A rigid diet and rest were prescribed, in spite of which the amount of albumin steadily increased, the blood pressure gradually rose and edema became rapidly more marked, until, June 29, the albumin was 2.1 per cent., by Purdy's method. Casts were very numerous; the blood pressure reached 210, systolic, 155, diastolic, and there was very marked general anasarca, moist râles in the chest and rapid irregular heart tones. On this date, black spots were noticed before the eyes, and severe headache and dizziness developed. The eye-grounds were not examined and no vaginal examination was made. A diagnosis of pregnancy of about eight months with impending eclampsia was made, and an immediate cesarean operation was decided on.

Operation.—This was performed at St. Joseph's Hospital, June 29, at 7:30 p. m., under gas and oxygen anesthesia. The abdomen was opened by a right rectus incision, and a dark, bluish, smooth mass, resembling an ovarian cyst, was revealed. On palpation, fetal parts were felt, separated from the hands by a thin membrane, which ruptured almost at once, with a gush of water. The baby was lifted out in the usual way, the head offering considerable resistance. The cord was clamped, and the baby was revived by an assistant, with no more difficulty than is usual in a cesarean section.

After removal of the child, there was a fair amount of hemorrhage, which was controlled by pressure with gauze. Exploration now revealed the presence of a uterus somewhat enlarged and containing a subserous fibroid the size of a half-walnut on top of the fundus, and a large pea-sized fibroid on the posterior surface. The right adnexa were normal. The left tube was about 6 inches (15 cm.) long, and the expanded fimbriated extremity was directly continuous with the cavity formed by the membranes, as shown in the accompanying illustration. The placenta was thin and widespread, being planted on the posterior surface of the left broad ligament and on the sigmoid and the intervening pelvic wall, beside being adherent to both the large and the small intestine. The placenta thus formed the left and upper side of the sac. The left ovary was not identified, but was prob-

ably spread out in the wall of the sac. Actively bleeding vessels entered through adhesions from the large and small intestines, and some very large vessels entered the placenta from the broad ligament.

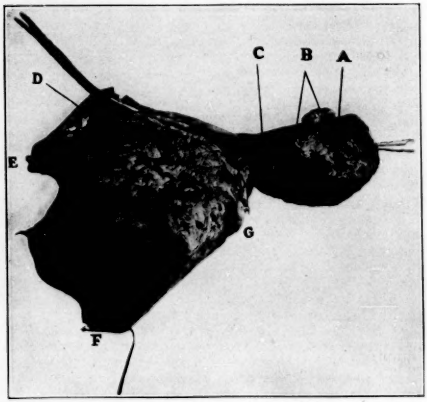
While bleeding was controlled by pressure and clamps, the adhesions were rapidly freed, and the upper part of the uterus containing the fibroids was removed, together with the left tube and the placenta and sac, as completely as possible. A large number of vessels were tied and the raw surfaces covered with peritoneum, the sigmoid being sutured over the stump of the uterus. The right adnexa were conserved. Closure was made without drainage, the entire operation consuming about fifty minutes.

The baby, a boy, weighing 6 pounds and 3 ounces (2,800 gm.), had hair and well developed nails, indicating birth at practically complete term. The skull was somewhat deformed from resting on the sacrum, and there was a moderate calcaneovalgus of the right foot, a marked talipes equinovarus of left foot and a partial dislocation of left hip, with indication of some bony pathologic process in the left knee.

Course.—The postoperative course for both mother and child was uneventful. The urine cleared up rapidly, the albumin disappearing in nineteen days. The eyes cleared rapidly; the headaches disappeared, and the mother left the hospital in good condition on the twenty-second day.

Up to the present time, after seven months, there has been no return of albumin, casts or any toxic symptoms. Blood pressure is now, systolic, 130; diastolic, 80. The patient weighs 145 pounds (66 kg.). Normal weight before pregnancy was about 155 pounds (70 kg.).

The baby had slight fluttering of the eyelids for a few days, but no convulsions. There being no lactation, he was kept in hospital five weeks on artificial feeding. At 7 months, his weight is 16 pounds (about 7.3 kg.). The shape of head has improved a good deal, but it is still somewhat deformed. Orthopedic treatments have been carried out since the second month, and the right foot is practically normal. The left foot, knee and hip are considerably improved.



Uterus and portion of sac (posterior view): *A*, uterus; *B*, fibroids; *C*, *D*, tube; *D*, beginning of fimbriae; *E*, *F*, *G*, portion of sac, which is adherent to under surface of tube and posterior surface of broad ligament. There is no demonstrable connection between tube and sac at any place except extremity of tube, *D*.

COMMENT

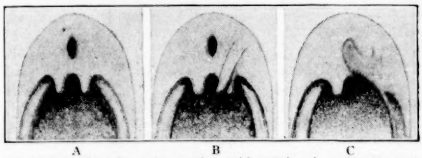
The presence of a complete tube with the sac starting at the fimbriated end and the disappearance of the ovary would indicate that fecundation took place either in the fimbriated extremity of the tube or in the ovary itself. As to the diagnosis of the case, a vaginal examination would have helped to make it more definite, but this was omitted on account of the decision to terminate the pregnancy by cesarian section. The fact that the uterus did not surround the fetus made the mass smaller than normal, so that pregnancy was apparently of about eight months' duration; whereas, in reality, it was at term.

First National Bank Building—Timken Building.

CONGENITAL PERFORATE SOFT PALATE AND DOUBLE UVULA, WITH REPAIR OF PERFORATION

JOHN H. TRINDER, M.D., FORT SAM HOUSTON, TEXAS
Major, Medical Corps, United States Army

This case shows two anomalies: a defect in the soft palate and two distinct uvulas. Both were corrected at one operation. The tissue for the graft was generously provided by Nature.



Perforate soft palate, two uvulas, with repair of perforation: *A*, before; *B*, incision of uvula; *C*, after.

REPORT OF CASE

A white man, aged 26, a private in the Air Service, whose family and previous personal history was negative, had a perforation of the soft palate at birth. In 1920 an unsuccessful attempt was made to close it. On admission to the hospital he had a central perforation of the soft palate, 1 cm. long by 0.5 cm. wide. He also had two normal sized uvulas, symmetrically placed, lateral to the median line of the curtain of the soft palate. His speech was somewhat blowing in character, and he regurgitated fluids. As he expressed it, he "drank water like a chicken," by getting a mouthful and raising his head in the air and then swallowing. He was somewhat under weight, 135 pounds (61 kg.), with a height of 67½ inches (170 cm.). Food often lodged in this perforation.

Oct. 22, 1922, under procain, 1 per cent., by injection, the left uvula was split in the lateral plane, and the dissection extended upward and outward over the soft palate, thus making two mucous flaps. The edges of the perforation were denuded and the anterior flap turned upward and inward, and sutured around the margin of the perforation. The posterior flap was then turned upward and outward, covering the denuded area of the soft palate, extending over as far as the beginning of the tonsillar fold, and sutured in place. Union took place by first intention with the exception of a pinpoint area at the upper angle.

At present the perforation is closed, except a minute hole at the upper angle. The patient no longer regurgitates. The speech has decidedly improved, and he has gained in weight. The accompanying illustrations show the condition before and after operation.

Station Hospital.

CONGENITAL DISLOCATION OF THE HIP, WITH INTRACAPSULAR EXOSTOSIS

CARROLL L. STOREY, M.D., DETROIT

History.—M. B., aged 13, a schoolgirl, seen, Nov. 10, 1920, complained of pain in the left hip and knee, of one year's duration. The family history was negative for bone tumors or congenital dislocation of the hip. The patient had had no serious illnesses. Birth had been difficult, with breech presentation, and instrumental delivery following version. No abnormality of the hips was noted at this time. The patient walked at the usual time, but had always limped. No relief was sought for the painless limp, until the child was 11 years

of age, when the limp became worse and was accompanied by pain in the left hip and knee. A physician made a diagnosis of rheumatism. The pain and limp had continued.

Physical Findings.—The general physical examination was negative. The patient walked with a marked left-sided limp, with characteristic left side-sway when weight was shifted to the left leg. The left leg was 1¾ inches (45 mm.) short. There was limitation of motion in all directions, more marked in abduction and hyperextension. The trochanter was 1 inch (25 mm.) above Nélaton's line. Trendelenburg's sign was positive on the left. Passive motion of the joint was not painful. The diagnosis at this time was congenital dislocation of the hip.

Roentgen-ray examination confirmed this, and in addition disclosed an intracapsular exostosis projecting from the under surface of the neck of the femur (Fig. 1). The other joints were normal.

Operation and Result.—Feb. 8, 1921, the hip joint was approached through a Smith-Peterson incision, and the capsule incised, which incision disclosed the head of the femur resting on the wing of the ilium above and behind the acetabulum. Extending downward, forward and inward from the under surface of the neck of the femur was an exostosis about 1½ inches (40 mm.) long and three-quarters inch (20 mm.) thick at its narrowest part. The exostosis had a broad base, a narrow neck and a mushroom-like head, the surface of which was free and covered with small, cartilaginous excresences. The growth was entirely intracapsular and free except for a narrow line of attachment to the capsule at the inner border of the base, neck and head of the exostosis. The growth was removed and an attempt made to reduce the hip, but the patient developed shock symptoms and the effort was given up. Following the healing of the wound, heavy traction was applied to the leg for three weeks. Then an attempt was made to reduce the dislocation by the closed method, the

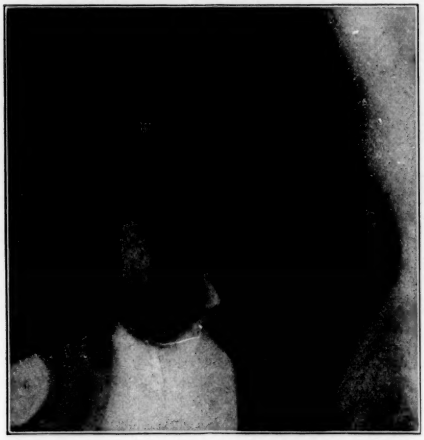


Fig. 1.—Intracapsular exostosis of left hip in connection with dislocation, Nov. 13, 1920.

Bradford hip machine being used. This attempt was successful. The thigh was immobilized in a position of 90 degrees of flexion, abduction and outward rotation. Roentgen-ray examination showed the reduction complete.

The last cast was removed, Dec. 9, 1921, and treatment given to reduce stiffness. This was not successful. May 20, 1922, under gas anesthesia, the thigh was forcibly adducted and extended, followed by baking, massage and manipulation daily. June 7, 1922, there was three-quarters inch shortening, with 35 degrees flexion deformity of the hip. There was also 15 degrees outward rotation. There was no adduction or abduction deformity. At this time the patient was under treatment by baking, massage, and active and passive motion. A roentgenogram, July 14, 1922, showed no recurrence of the dislocation, but the head of the femur was being absorbed gradually and with loss of cartilage (Fig. 2). No evidence of the base of the exostosis could be seen. At present (Jan. 24, 1923) the left hip is practically stiff in 25 degrees of

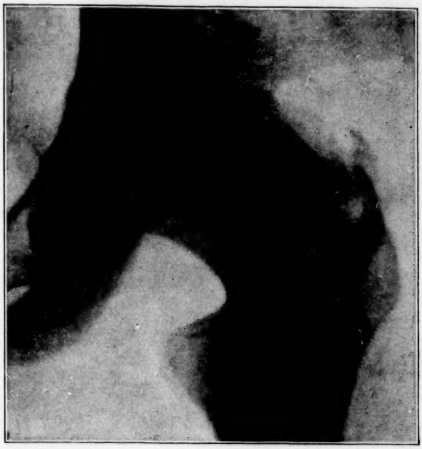


Fig. 2.—No trace of exostosis, July 14, 1922. The dislocation has been reduced; some bone absorption has taken place, and the hip is stiff in a useful position.

flexion and 15 degrees of outward rotation. The patient is able to walk without fatigue and without pain.

The special point of interest in this case is the intracapsular exostosis. I have not been able to find a similar case in a thorough search of the literature. This case presents none of the ear marks of the type of mutiple hereditary deforming exostoses described by Ollier and Ehrenfried under the name of chondrodysplasia. A traumatic displacement of osteogenic tissue from the epiphyseal line seems the most reasonable conclusion as to the etiologic factor.

10 Peterboro Street.

A SIMPLE, INEXPENSIVE AND EFFICIENT EXTENSION APPARATUS FOR TREATING FRACTURES OF THE TIBIA AND FIBULA

E. M. STANTON, M.D., SCHENECTADY, N. Y.

The principle of a screw-controlled extension apparatus rigidly attached to a divided plaster cast has long been used by a number of surgeons in the treatment of certain simple and compound fractures of both bones of the leg. The screw-extension apparatus so far described has been of a rigidly built type, often quite expensive and procurable only through instrument makers. This type of apparatus is usually not available when needed; and, when it is available, often the mechanical perfection of its construction tends to make it too rigid to be readily adapted to the exigencies of individual cases. The screw extension apparatus employed by me is so constructed that it can be readily fitted to any cast at any point from the ankle to the knee, and can be altered at will to meet any special requirements of individual cases.

Figure 1 illustrates the general construction of the extension units. Six pieces of ¾ by ⅛ inch strap iron from 8 to 10 inches long are drilled about ⅜ inch from one end with

a hole a little larger than the diameter of the ¼ inch bolts used for the extension screws. Each piece is bent at a right angle about 1 inch from the drilled end. These pieces are now applied to the cast in pairs and held in place by plaster-of-Paris bandages, as shown in Figures 2 and 3. The holes in each pair of the extension pieces should line up to admit the extension bolts. For extension screws, we use ¼ inch bolts usually 4 or 5 inches long. Each must be provided with four nuts placed one on each side of each extension piece.

The strap iron and bolts can be procured in almost any village, and the extension pieces can be made from the strap iron in a few minutes with a hack saw and a hand drill. If the bolts used for the extension screws are not already threaded along the entire shaft, a ¼ inch die, to thread the bolt down to the head, will also be needed. In Figure 1, one of the pieces of strap iron has been bent to fit the front of the cast over the ankle and foot. We have found it advisable to bend the ends of the irons distal to the extension screws so that they will dig into the cast slightly and thus prevent slipping if the extension is applied before the plaster has had time to set firmly.

In treating fractures by this method, the leg is held in an ordinary pillow and side splint or other appropriate retention apparatus until the swelling has subsided. In compound fractures, if there is no systemic evidence of infection, the original dressing is not disturbed for a period of eight or ten days, after which the dressing is changed and the cast applied. In simple fractures, the cast is applied as soon as the swelling has subsided.

Since the pressure from the extension comes against the knee and foot, it is absolutely essential that these points be properly padded. For this purpose, we use a good grade of felt, about ¼ inch thick, fitted over a cotton stocking. The felt must be cut to fit the knee and foot accurately, and the edges of the felt pieces should be stitched together so as not to become displaced while the plaster is being applied. In compound fractures, a small sterile dressing is applied before the stocking is put on.

With properly applied padding, the extension pressure is applied evenly against the sides of the heel, the malleoli and the dorsum of the foot, and we have never had any trouble due to pressure. In obese patients, we have sometimes observed trouble owing to the upper half of the cast slipping upward over the knee; but, if the cast is applied properly, this is not likely to occur.

Except in children, no anesthetic is used; but before the cast is applied, a special effort is made to impress the patient with the fact that the leg is to be handled very gently, and that if he will completely relax and avoid sudden muscular contractions, there will be almost no pain associated with the application of the cast. While the cast is being applied, every effort is made to keep the knee and foot in good orthopedic relationship; but no effort which might produce pain is made to improve the position of the fragments at the site of fracture. The cast is usually allowed to harden for twenty-four hours before the extension apparatus is applied, although it can be applied as soon as the plaster has set.

After the plaster has hardened, the extension irons are applied at three equidistant points, usually one on each side and one in front, with the bolts opposite the point of fracture. Before the bolts are inserted, the cast is cut entirely around at the level of the fracture, and in compound fractures, an additional portion of the cast is cut away, if necessary, to allow for dressings.

Extension is obtained gradually, thus being accomplished without causing pain or exciting muscle spasm. In oblique or comminuted fractures with considerable shortening, we try to gain about ¼ inch a day. In compound fractures in which there is danger of breaking down barriers to infection, we are often satisfied with a slower rate of correction.

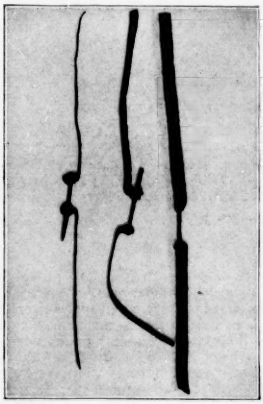


Fig. 1.—A set of extension units separate from the casts.

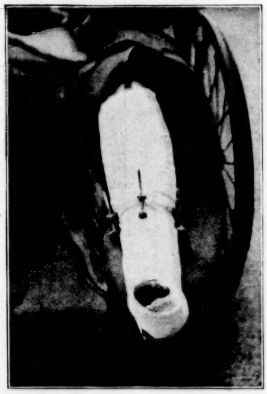


Fig. 2.—Extension apparatus applied to fracture of middle third of left leg.

Fig. 3.—Extension apparatus applied to fracture of middle third of right leg. Spaces between upper and lower halves of cast are filled in with plaster before the extension units are removed.

The apparatus was originally designed to treat a compound comminuted fracture of the lower third of the tibia and fibula which came into our hands eight weeks after occurrence, at which time there was 2¼ inches of shortening. Full extension was obtained in about twelve days, without anesthesia, without pain and without any exacerbation of the rapidly subsiding infection. Complete extension was easily maintained until firm union had taken place, and the ultimate result was practically perfect. Since then, we have employed this method in all fractures of the leg in which there has been any tendency toward shortening.

Taken together, the three points of extension form a rigid junction between the upper and lower halves of the cast, and yet any one or two can be readily bent so that, by the application of greater extension at one side or by the releasing of the extension at another, any degree of angular deformity may be corrected at will. Even lateral deformities may be corrected by the insertion of wedges here and there.

The ability to obtain and maintain slow, painless correction of deformity without exciting muscle spasm is of distinct advantage in the treatment of simple fractures. In compound fractures, the ability to obtain and maintain gradual correction of deformity is an essential factor of success. Next to

asepsis, the chief rule for preventing infection in compound fractures is to avoid active manipulation in the region of the fracture. Nearly all surgeons realize that it is dangerous to reoperate in a compound fracture until long after the wound has closed. Many surgeons, however, fail to realize that it is almost equally dangerous actively to manipulate the fragments of a compound fracture a few days or weeks after the accident. We have many times seen compound fractures progress without active infection for about ten days, when, with the wound practically healed and no evidence of active infection, the surgeon has felt called on to improve the position of the fragments, with the immediate result of developing an active infection.

With the slow correction method, the first ten days or more of treatment can be devoted entirely to the avoidance of infection. In my practice, this consists chiefly in leaving the original dressing severely alone unless symptoms of active infection develop. Later, shortening and deformity can be corrected by moving the fragments so gradually that protective granulation tissue and other barriers are not broken down, and therefore no opportunity is allowed for active infection to develop.

When union has progressed to such a degree that there is no longer danger of recurrence of shortening, the extension cast may be removed and a new cast applied; or occasionally, as shown in Figure 3, it may be deemed advisable simply to fill in the space between the two halves of the cast with plaster, and then remove the extension apparatus from the original cast.

Medical Arts Building.

CORNEAL ULCER CURED BY TONSILLECTOMY: REPORT OF CASE

CHARLES B. WILLIAMS, M.D., MINERAL WELLS, TEXAS

Mr. P. O. B., aged 35, an oil field contractor, came to me, April 12, 1922, for treatment of corneal ulcer of the left eye. He had been an active, healthy man save for an attack of what was diagnosed as influenza in January, 1922, from which he seemed to have never quite fully recovered. About the middle of March, a foreign body, presumably a small piece of steel, that had injured the left eye was removed in Fort Worth, where the patient remained during the following three weeks under the care of a competent oculist.

When first seen by me there was a shallow ulcer of the left cornea covering the inner third of the surface, with a deep area about 1 by 2 mm. at the upper, inner margin of the pupil. Iritis was not particularly marked. Pain was sufficiently intense to interfere with sleep.

METHODS OF TREATMENT

In routine fashion I examined the patient's nose and throat at the first sitting, giving possibly a bit closer attention than usual on account of the history. The nose and sinuses were apparently normal, as seemed also the tonsils, save for two or three open crypts in the right tonsil, from which was expressed a little mushy débris. The left tonsil appeared normal. The dilated crypts in the right tonsil were cleaned and treated with mercurochrome-220 soluble a number of times during the following month. Microscopic examinations of scrapings from the ulcer revealed nothing significant.

From April 12 to May 13 I tried various methods of treatment. Feeling that there must be some systemic cause for the condition, I repeatedly pressed the patient for a history of syphilis or gonorrhea, but always received a negative reply. Finally I gave the left tonsil a forcible squeezing, and it literally burst open an encapsulated abscess in the submerged upper pole, from which about a dozen drops of thick, creamy pus was expressed. On the following morning both tonsils were enucleated, and the left showed a concealed cavity about 7 mm. in diameter lined with a complete sac, which came away intact. By the third day after operation, the corneal ulcer showed improvement. The patient was discharged ten days after the tonsils had been removed, with the ulcer completely healed.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 847)

[NOTE.—This is the thirteenth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

FEEDING DURING DIFFERENT PERIODS OF THE FIRST YEAR

The First Four Weeks of Life.—During the first two or three weeks of life, lesser relative quantities of food must be given than is recommended for later periods. During the first week, skimmed milk may be used in place of whole milk in amounts approximating 1 ounce to the pound of body weight. During the second week, the skimmed milk may be gradually replaced by whole milk, so that at some time during the third week the infant will be receiving one or more ounces of whole milk per pound of body weight. By the fourth week the infant can usually take the recommended 1½ ounces of milk per pound of body weight. Beginning with the addition of 0.5 gm. of cane or milk sugar for each pound of body weight, these can be increased to 1 gm. by the beginning of the second week, and to 2 or 3 gm. by the beginning of the third week. At all times an endeavor should be made to administer at least one sixth of the infant's body weight in water during the twenty-four hours.

Such mixtures must of necessity show a lower caloric value than will meet the infant's needs for growth and development, but, as suggested, the weak formulas should be used for mixtures for the new-born, and the strength increased according to the infant's tolerance. When there is positive evidence that the mother will have an insufficient milk supply, the milk mixtures should be increased in strength somewhat more rapidly during the first two weeks, or larger quantities fed than outlined in Table 27.

TABLE 27.—*Diet for New-Born Infants During the First Four Weeks of Life*

	1st 48 Hrs.	3d to 4th Days	5th to 6th Days	7th, 8th and 9th Days	10th, 11th and 12th Days	13th and 14th Days	3d Wk.	4th Wk.
Milk (whole), ounces	..	..	..	3	4	6	8	11
Milk (skim), ounces	..	6	8	5	4	4	2	..
Sugar (cane), drams	1	1	2	2	2	3	4	6
Water (boiled), ounces	16	10	8	8	8	8	8	10
Calories in mixture	15	81	118	148	158	215	250	321
Feedings:								
Amount in ounces	1	2	2.5	2.5	2.5	3	3	3.5
Number daily	6	6	6	6	6	6	6	6
Intervals in hours	4	4	4	4	4	4	4	4

These mixtures should be boiled for three minutes over the direct flame, or a double boiler may be used. In the latter case the water in the outer vessel should boil for eight minutes. Boiled water should be added to make up the original quantity.

Additional Foods from the Second to the Sixth Month.—The milk mixtures may be supplemented by the following additions to the diet:

Cereal waters may be used as the diluent beginning with the second month. These are best made from

whole cereals, as the dextrinized flours are devitalized. From one-sixtieth to one-thirtieth ounce (from 0.5 to 1 gm.) of cereal for each pound of body weight may be used for making the amount of cereal water desired in the mixture.

Orange juice should be begun during the second month, beginning with one-quarter teaspoonful, diluted with water, twice daily, and increasing gradually until from one-half to 1 ounce is given by the end of the sixth month.

Cod liver oil, either phosphorized or plain, should be started by the third month, beginning with 5 drops daily, and increasing to 1 teaspoonful twice daily, by the end of the sixth month.

Cereal gruels (oatmeal, farina, cream of wheat) can be started by the beginning of the fifth month. They should be well cooked. The gruel can be added to one of the midmorning meals and later to the evening meal as well, starting with one-half teaspoonful and increasing gradually until 2 or 3 tablespoonfuls is given twice daily.

BARLEY, OATMEAL AND RICE WATER

Soak 2 tablespoonfuls of the cereal grains in water overnight, pour off the water, add 1 quart of fresh water, and boil down to 1 pint (which takes about two hours). Add boiled water to make 1 pint, if necessary. Strain through fine cloth. Keep in icechest.

Cereal water may be from barley, oatmeal or rice flours by using 1 rounded tablespoonful to 1⅛ pints of water, boiling it for twenty minutes in an open stew pan, and stirring constantly.

CEREAL (OATMEAL, FARINA, CREAM OF WHEAT)

2 tablespoonfuls cereal.
½ pint water.
½ pint milk.
1 pinch salt.
Cook in double boiler for one hour.

Additional Foods from the Sixth Month to the End of the First Year.—A broth and vegetable meal may be gradually substituted for the midday meal. This is best given as a vegetable soup. Feeding should begin with 1 ounce, gradually increased to 8 ounces, 1 ounce of milk mixture being omitted for each ounce of soup given. If less than a full feeding is given, the meal should be finished with sufficient milk mixture, from a second bottle, to make a full feeding.

VEGETABLE SOUP (LAMB, CHICKEN, VEAL)

¼ pound of lean meat cut into small pieces.
1 potato, moderate size.
1 carrot.
2 stalks of celery.
1 tablespoonful of pearl barley.
2 tablespoonfuls of rice.
2 quarts of water.
1 pinch of salt.

Finely divide the vegetables. Add vegetables, barley and rice to the water. Boil down to 1 quart, cooking three hours. Add salt. Rub vegetables through a fine sieve. When in season, spinach, tomato, peas and beans may be added to the soup stock, if desired.

If kept in the upper compartment of the icechest against the ice, it may be used on the second day, but never later.

Strained vegetables (spinach, carrots, potatoes) may be added in small portions by the eleventh or twelfth months as a side dish. There is little advantage in so using them before this time, for the vegetables in the soup, when rubbed through a fine sieve, are incorporated in the broth.

Toast or dried bread crumbs may be added to the soup, if desired.

Stewed fruits (apples and prunes) may be fed in small quantities by the end of the first year. So far as their accessory food value is concerned, they are inferior to orange juice.

An infant should be taught to drink from a cup at least once daily in the latter part of its first year. This also holds true for the taking of its semisolids from a spoon.

Iron medication may be begun in the second half of the first year or earlier by administering some of the organic iron preparations or small doses of inorganic preparations, such as iron and ammonium citrate, one-half grain, twice daily.

EXAMPLES OF APPLICATION OF FEEDING RULES FOR WHOLE MILK DILUTIONS

Normal Infant, Aged Three Months.—This infant should weigh 11 pounds (average birth weight, 7 pounds, plus 4 pounds, representing a gain of 5 ounces weekly for thirteen weeks).

Estimating 1½ ounces of milk per pound of body weight, the result is 16½ ounces of milk.

Adding *3 gm. of cane sugar per pound of body weight,* or 1 ounce for each 10 pounds, the result is 1 1/10 ounces of sugar, or 2¼ level tablespoonfuls for 11 pounds.

To make the total daily quantity 33 ounces (3 ounces of fluid per pound of body weight) it is necessary to add 16½ ounces of water to the quantity of milk used.

The baby should be fed five or six times daily, and should receive 5½ or 6½ ounces of the mixture at each meal.

For practical purposes cow's milk may be considered as averaging: fat, 4 per cent.; protein, 3.5 per cent.; carbohydrate, 4 per cent.

The amounts of the various elements in the mixture and the grams of each and calories per pound of body weight in the milk mixture as given above, for a normal 3-months old infant, weighing 11 pounds, are given in Table 28.

TABLE 28.—*Amounts in Mixture for Normal Infant Aged Three Months*

	Protein	Fat	Carbohydrate	Salts Gm.	Calories
Milk (16.5 oz. = 495 c.c.).....	17.3	19.8	19.8	3.46	346
Water (16.5 oz. = 495 c.c.).....	....	....	....	....	...
Sugar (1.1 oz. = 33 gm.).....	....	....	33.0	....	132
Total mixture (33.0 oz. = 990 c.c.)...	17.3	19.8	52.8	3.46	478
For each pound of body weight.....	1.575	1.8	4.8	0.31	43

We thus find that the infant fed on the prescribed diet receives 33 ounces of the mixture containing: fat, 1.8 gm.; protein, 1.575 gm., and sugar, 4.8 gm. for each pound of body weight.

The infant receives 43 calories per pound of body weight.

Orange juice and cod liver oil should be included in the diet.

It should be remembered that the needs of the individual infant are to be covered, and some infants need food of a higher caloric value for each pound of body weight.

The mixture may readily be strengthened to meet indications for more fat and protein by the addition of milk or cream, and for more carbohydrates by the addition of flour and sugar. With the addition of more milk, the water should be decreased.

Infants inclined to vomit part of the feeding will often retain the food to better advantage by being fed

small quantities (2½ ounces to the pound of body weight for the day) of a more concentrated mixture.

Normal Infant, Aged Eight Months.—The infant should weigh 17¼ pounds (average birth weight 7 pounds, which should be doubled in the first five months—14 pounds, plus a gain of 4 ounces a week for the remaining thirteen weeks—3¼ pounds).

The following mixture will be prepared:

One and one-half ounces of milk per pound of body weight, equals 26 ounces.

Water to make 1 quart, equals 6 ounces.

Sugar, 1½ ounces. As previously stated, the amount of sugar to be added is usually limited to 1½ ounces, further carbohydrate needs being furnished by the addition of cereal waters or cereals.

Starch, one-fourth ounce, or 8 gm. (approximately 1/60 ounce, or 0.5 gm. per pound).

This is to be fed in four feedings of 8 ounces each, and the fifth may be replaced by a soup and vegetable meal. A cereal feeding (from 2 to 4 tablespoonfuls) can also be given with one or two of the meals, part of the bottle of milk being poured over it, and the meal being finished with the remainder of the bottle.

TABLE 29.—*Amounts for Normal Infant Aged Eight Months*

	Protein	Fat	Carbohydrate	Salts Gm.	Calories
Milk (26.0 oz. = 780 c.c.)	27.3	31.2	31.2	5.46	546
Water (6.0 oz. = 180 c.c.)	....	....	....	....	...
Sugar (1.5 oz. = 45 gm.)	....	....	45.0	....	180
Starch (0.25 oz. = 8 gm.)	....	....	8.0	....	25
Vegetable soup (8.0 oz. = 240 c.c.)	2.0	4.5	8.0	2.4	144
Cereal (1 hpg. tblspoonful 1.0 = 30 gm.)	....	....	15.0	....	50
Total feeding	29.3	35.7	107.2	7.86	945
For each pound of body weight	1.7	2.1	6.2	0.46	55

Further needs of the individual child may be supplied by concentrating the milk until 1 quart of whole milk is given, the carbohydrates in the mixture being gradually decreased and given in another form, as gruel or custard.

Underweight Infant, Aged Three Months, Weight Eight Pounds.—For beginning, this mixture should be prepared: milk, 12 ounces (1½ ounces for each pound of present weight); water 12 ounces; cane sugar, 8/10 ounce (1½ level tablespoonfuls, or 1/10 ounce or 3 gm. for each pound). This mixture is sufficient to make six feedings of 4 ounces each.

To meet the requirements of this infant for growth and development, the needs of a full-weight infant of the same age must be approximated as rapidly as the infant's tolerance for food permits. These increases can usually be made rapidly, if the infant is well other than for its underfeeding. The first increases are made in the carbohydrates by further addition of sugar and cereal water, until one-tenth ounce (3 gm.) per pound of sugar and from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) per pound of cereal flour, are added in the form of cereal water. These increases are calculated on the basis of average full weight (11 pounds for this age). The milk can be increased until from 1½ to 2 ounces per pound of full weight, or from 16.5 to 22 ounces for the total mixture is given. The total fluids should represent a minimum of 3 ounces per pound.

If the infant is suffering from digestive disturbances, it may be necessary to begin with 1 ounce of milk or even less per pound of its present weight, that is, 8 ounces or less in the mixture, adding only 1 or 2 gm. of sugar per pound. It must, however, be remembered that the infant will require 32 calories for each pound of body weight to sustain it; and if it is underfed for too long a period, inanition will result.

With equal simplicity, errors in the mixture received by infants seen in the daily routine of practice may be interpreted almost at a glance.

Example: An infant, aged 5 months, weight 12 pounds, on bottle feedings of milk, 15 ounces; water, 20 ounces; sugar, 2 ounces; feeding, 7 ounces, times, 5. Bowel movement three times daily.

An average infant at this age should have doubled its weight to 14 pounds and should therefore be receiving a minimum of 21 ounces of milk and 1 4/10 ounces of sugar. The error lies in the quantity of fat and protein, which is too small in proportion to the quantity of sugar. This, in most instances, would account for the increased number of stools and subsequent stationary weight.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SULPHARSPHENAMINE. — Sulpharsphenamina. — The salt, disodium 3,3'-diamino-4,4'-dihydroxyarsenobenzene-*N*-dimethylenesulphonate, $NaOSO_2.CH_2.NH.OH.C_6H_3.As:As.C_6H_3.OH.NH.CH_2.O_2SONa+4H_2O$, adjusted by the addition of inorganic salt to an arsenic content of 18 to 20 per cent. The arsenic content of 3 parts of sulpharsphenamine is approximately equal to 2 parts of arsphenamine. According to claims, it differs from neoarsphenamine in having two side chains instead of one and in that the sulphur has a valence of four (with an extra oxygen atom) and not two as in neoarsphenamine.

Actions and Uses.—The same as those of neoarsphenamine over which it is claimed to have the advantage of somewhat greater stability of solution in the presence of air, and of permitting subcutaneous injection.

Dosage.—For intramuscular or subcutaneous use the drug is dissolved in sterile, freshly distilled water in the proportion of about 0.1 Gm. to 0.3 Cc.; for intravenous use a greater dilution is desirable, about 0.1 Gm. to 2 to 3 Cc.

Sulpharsphenamine is an orange yellow powder possessing an odor resembling that of sulphur dioxide and arsine. It is readily soluble in water yielding a yellow solution which is acid to litmus (*distinction from neoarsphenamine which is neutral and sodium arsphenamine which is alkaline*). On standing over night, the solution darkens and a precipitate is formed.

A *freshly* prepared solution of sulpharsphenamine (1:100) yields no immediate precipitate on the addition of diluted acetic acid, whereas neoarsphenamine yields a precipitate sooner (*distinction from arsphenamine*). The general reactions with silver nitrate and ferric chloride, the tests for the presence of sulphur, the assay and the toxicity tests are the same as those for neoarsphenamine.

Sulpharsphenamine-Abbott.—A brand of sulpharsphenamine-N. N. R.

Manufactured by the Dermatological Research Laboratories, branch of the Abbott Laboratories, Chicago, under U. S. patent 1,024,993 (April 30, 1912; expires 1929) by license of the Chemical Foundation, Inc.).

Sulpharsphenamine-Abbott, 0.2 Gm. Ampules.
Sulpharsphenamine-Abbott, 0.3 Gm. Ampules.
Sulpharsphenamine-Abbott, 0.4 Gm. Ampules.
Sulpharsphenamine-Abbott, 0.6 Gm. Ampules.

Research Library to Commemorate Birth of Copernicus.—Copernicus, the great Polish astronomer, whose theory that the earth moves around the sun revolutionized astronomy, and who was born 450 years ago, was also a physician. One of the best research libraries in Poland is being erected at Torum, the home town of Copernicus, to commemorate his birth.

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SATURDAY, MARCH 31, 1923

CIRCULATORY ADAPTATIONS TO EXERCISE

The human body exhibits a remarkable versatility in meeting the rapidly changing exigencies of every-day life. In part, this unusual adaptability, which can rarely be duplicated in mechanisms of human construction, is due to the "extravagance of nature" in the development of the animal organism. As Meltzer once described the situation, numerous important organs and complex tissues are built on a plan of great luxury. Some organs possess at least twice as much tissue as a normal or even maximal activity would require. In other organs, especially in those with an internal secretion, the margin of safety amounts to ten or fifteen times the actual need. It is surely no disadvantage in the long run if Nature is not as economical with her resources in the body as a stricter guardian might demand. Those species that are provided with an abundance rather than a paucity of useful structure and energy, and are thus prepared to meet many emergencies, are presumably best fitted to survive in the struggle for existence.

Another factor of advantageous adaptability is often found in the instances in which one and the same function can be cared for by more than one mechanism. In reference to this, Meltzer has called attention to the vasomotor apparatus. It has long been known that, after eliminating the influences of the sympathetic and the control nervous system, the blood pressure is well taken care of by the peripheral mechanism of the walls of the blood vessels. A further instance of the existence of parallel devices for the accomplishment of one function has been demonstrated anew recently by Meek and Eyster [1] at the University of Wisconsin. It is well known that an increased circulation is one of the conspicuous effects of physical exercise; indeed, such circulatory activity is an obviously indispensable requisite for the transport of essential oxygen and food material to the contractile tissues, as well as the prompt removal of rapidly accumulating wastes and heat. By an ingenious device for determining the cardiac size and output, the data being computed from the silhouettes secured from roentgenograms taken during the diastolic and systolic phases of the heart cycle, it has been made evident that not all persons respond in the same manner to exercise. Usually the cardiac output per beat is increased by activity, the effect being represented by an average output of 79 c.c. before exercise, which increased to 94 c.c. following work. In a few persons the heart rate alone changed. Sometimes the diastolic size of the heart showed an increase during exercise; often it did not. In any event, the minute volume output always increases with exercise, a characteristic change being represented by the figures 5,900 c.c. at rest and 10,750 c.c. during work.

One cannot avoid concurrence with the belief of Meek and Eyster that in exercise the output of the heart may be increased either by a larger output per beat or by an acceleration of the pulse or by any combination of these two factors. In any event, the outcome is a beneficent one for the body. The multiple protection against unexpected contingencies is not the least of unique superiorities of the devices for human function.

1. Meek, W. J., and Eyster, J. A. E.: Cardiac Size and Output in Man During Rest and Exercise, Am. J. Physiol. **63**: 400 (Feb.) 1923.

BIOLOGIC REACTIONS OF ARSPHENAMIN

The complexity of the physical and chemical properties of arsphenamin probably accounts for the complexity of the biologic reactions resulting from its passage through the body. Among the most disturbing of these reactions are the nitritoid or anaphylactoid symptoms occurring after intravenous injection. Their frequency and severity are sufficiently marked to continue to attract attention, despite the refinements of technic of preparation and of administration of the agent. In 1918, the number of deaths reported in Germany was 3.8 in 10,000, and in England, 4; complications in England were 16 in 10,000. The extent of the less severe degrees of the reactions is not statistically reported, but is probably considerable, in view of the large number of administrations annually throughout the world.

The earlier studies of the anaphylactoid reactions from arsphenamin cleared up certain features, more or less obviously explainable, but left the underlying causes untouched. There were no difficulties in the way of understanding why improperly prepared, acid and precipitated solutions should be deleterious when injected intravenously; why respiratory and circulatory embarrassments were due to cardiac depression and disproportionate adjustments between the systemic and pulmonary circulations; what the effects of emboli and thrombi were when these occurred, and why true anaphylaxis was not the correct explanation. Dosage, and altered functional state of various organs, are

other factors entering into the causes of the reactions. However, there are certain fundamental features about the combining properties of arsphenamin with tissues and cells that were not sufficiently appreciated until the work of Jean Oliver [1] and associated workers at the Department of Pathology of Stanford University. These features probably concern not only the anaphylactoid reactions from arsphenamin, but also its reactions with tissues in general and even with spirochetes. They are based on the conception that arsphenamin can exist in the colloidal state, temporarily at least, and that the temporariness of this state is essential to the anaphylactoid reactions in particular.

Another observation has been that arsphenamin has a fairly constant agglutinating titer for red blood corpuscles of different species, human cells being most and chicken cells the least strongly acted on. The presence of electrolyte is essential for the agglutination; old and turbid, and the clear supernatant fluid of precipitated, solutions do not agglutinate the corpuscles, which bind or adsorb freshly prepared arsphenamin with great avidity. The rôle of the electrolyte (sodium chlorid) appears to be that of precipitant of the adsorbed arsphenamin, presumably in the corpuscular membrane. Precipitation occurs simultaneously with agglutination. Sugar (nonelectrolyte) does not cause agglutination of the adsorbed arsphenamin. It was found further by these investigators that certain hydrophilic colloids, such as gelatin and serum (under proper conditions) protect the erythrocytes against arsphenamin agglutination in vitro. The hemolysis that occurs appears not to be associated with the agglutination phenomenon. These results suggest that agglutination by arsphenamin occurs during the transition stage from its colloidal into a near crystalloid or completely crystalloidal state in the circulation, and that stabilization of the colloidal state prevents the agglutination.

The results in vitro were a forecast of the results in vivo; for it was found that the injections of large and repeated small doses into rabbits caused extensive intravascular agglutination and embolism. Single small doses resulted in no demonstrable emboli and thrombi, but, after several days of repeated administration, agglutinated cells were found in the lungs and spleen. Fundamentally, therefore, the adsorbed arsphenamin resulted in clumping of the cells; but, when these existed in small numbers, they were disposed of by phagocytosis and deposited in the various hematopoietic organs (liver, spleen, bone marrow and lungs) in the usual way known to occur with foreign particles.

From their work, the California investigators conclude that there are two phases to the reactions from arsphenamin: (1) the early or physical phase, which is concerned with the physical properties of the agent, and results in corpuscular agglutination with multiple embolism, the outcome being fatal sometimes, and (2) the later or chemical phase, which results in parenchymatous degeneration of viscera (kidney and liver), this being due to the action of the arsenic ion in the usual way. On the basis of the protection experiments in vitro, protection should be obtained with hydrophilic agents in vivo, i. e., with mixtures of arsphenamin and serum or gelatin; but how this will work out in practice remains to be seen. Meanwhile, the study of biologic reactions from arsphenamin has been advanced along lines that offer the best hope for progress, and, it may be hoped, not only for the elucidation of arsphenamin, but also of other agents which cause anaphylactoid reactions.

1. Oliver, Jean, and Douglas, Ethel: Biological Reactions of Arsphenamin, I, The Mechanism of Its Agglutinative Action on Red Blood Cells in Vitro, J. Pharmacol. & Exper. Therap. **19**: 187 (March) 1922. Oliver, Jean, and Yamada, So Sabro: II, The Protective Action of Hydrophilic Colloids on the Agglutination of Red Blood Cells by Arsphenamine, ibid. **19**: 199 (March) 1922; III, Its Immediate Toxicity as Contrasted with Its Late Ill Effects, and the Rôle of Agglutination in the Production of the Former, ibid. **19**: 393 (July) 1922. Oliver, Jean: The Relative Therapeutic Efficiency of Arsphenamine and Gelatin-Arsphenamine, Proc. Soc. Exper. Biol. & Med. **20**: 56, 1922.

INTRAPERITONEAL BLOOD TRANSFUSION

Transfusion of blood, an operation which cannot be described as conspicuously simple under any conditions, encounters special difficulties in the very young, in whom the anatomic obstacles call for special skill and training. In the youngest babies, transfusion is often carried out by the anterior fontanel route, which Helmholz [1] particularly recommended a few years ago. It is doubtful, however, whether injections into the longitudinal sinus should be attempted by the general practitioner. The puncturing of the region indicated is not without its dangers, as has only recently been indicated in THE JOURNAL.[2] Furthermore, after the age of 18 months, the fontanel is not usually patent, so that other places of transfusion then become inevitable. Direct transfusion through anastomosis of veins by means of cannulas is a method of theoretical choice; all too often, however, the requisite skill in blood vessel surgery is lacking when relief is imperative.

The difficulties cited have doubtless led to considerable effort to find substitute procedures. Subcutaneous and intramuscular injections have been demonstrated to be unsatisfactory from several standpoints. Falls [2] of the University of Iowa College of Medicine has therefore given renewed consideration to intravenous paths. In view of the frequent impossibility of entering the median basilic vein with success in infants, he has developed the technic of injections of citrated blood into peripheral vessels and especially the external jugular vein. Falls regards the procedure as safer

1. Helmholz, H. F.: The Longitudinal Sinus as the Place of Preference in Infancy for Intravenous Aspirations and Injections, Including Transfusion, Am. J. Dis. Child. **10**: 194 (Sept.) 1915.
2. Falls, F. H.: Blood Transfusion by the Citrate Method in Hemorrhages of the New-Born, J. A. M. A. **80**: 678 (March 10) 1923.

than the injection of blood into the longitudinal sinus; and it is not too difficult technically for the average physician.

At the University of Minnesota, Siperstein and Sansby [3] have investigated a still different method—that of intraperitoneal transfusion of citrated blood. The fundamental considerations for the success of such a plan have been carefully tested on animals. Absorption of blood from the peritoneal cavity was demonstrated to occur rapidly, so that in a few hours as much as a fifth of the estimated blood volume can thus be taken up. There is not merely a concentration of blood volume: the erythrocytes actually enter the blood stream without undergoing any morphologic changes. The intraperitoneal transfusion in both anemic and normal animals causes a sharp, temporary rise in blood values during the absorptive period. This is followed later by a more permanent increase in the blood picture.

Consequently, the process acts as a true transfusion, and not as the absorption of a nutrient material. That the intraperitoneal method with citrated blood can apparently be used in cases in which transfusion is indicated, when other routes are unavailable or impracticable, has been substantiated anew by Siperstein [4] at the Minneapolis General Hospital. Henceforth, the possibility of employing citrated blood intra-abdominally will demand careful consideration in pediatric practice.

SOME NORMAL STANDARDS FOR THE DETECTION OF ABNORMAL PHYSIOLOGIC PERFORMANCES

It is of the highest importance that the standards of comparison that are used in medicine, whenever a problem of deviation from the normal arises, should be thoroughly dependable. One can readily understand how futile it is to discuss pathologic excesses of blood pressure, for example, so long as there is uncertainty as to the range of variations in this function which admittedly healthy persons may manifest. A similar statement may be ventured for numerous other features of human physiology, such as the normal ranges of body temperature, the concentration of sugar and hemoglobin in the blood, and the volume and specific gravity of the urine. The number of circulating leukocytes is one of the factors in the organism regarding which information is often sought by the direct method of the "blood count." The existence of a "physiologic" leukocytosis at the height of digestion and after strenuous exercise has long been recognized; but there is frequently considerable uncertainty in the mind of the clinician as to how much allowance should be made for such normal changes in the numbers of the blood cells. The current belief is that the "digestive leukocytosis" is most marked when a person, after fasting, eats a meal containing large quantities of protein. It is said that under such conditions the number of white cells in the peripheral blood may be increased by about a third, the augmentation being particularly marked in the neutrophilic cells.

It seems worth while to direct attention to the somewhat unusual mass of statistics recently submitted by Feinblatt.[1] Examinations were made on eighty healthy persons, each of whom consumed 200 c.c. of milk after a period of fasting. The normal leukocyte counts gave surprisingly small variations, with an average of 7,400 cells for each cubic millimeter. There was postalimentary leukocytosis in every case, indicating averages of 8,800, 9,700, 9,800 and 9,200 white cells, half an hour, one hour, an hour and a half and two hours, respectively, after the meal. The results were so consistent that a postalimentary leukopenia may now be looked on as being, beyond question, of pathologic moment.

An illustration of a widely mistaken impression regarding what constitutes normal physiologic function and deviation from it is furnished by many of the current statements about the gastric juice. Carlson [2] has lately called into question the existence of true gastric hyperacidity. Actual hyperacidity, he states, in the sense of a gastric juice of greater than normal acidity has not been demonstrated in any disease, and probably does not exist. The pathologic deviation in acidity is always in the direction toward anacidity. But actual hypersecretion may exist, although we have no accurate measure of the total gastric secretion in normal persons in the course of a day. It is not less than 1,500 c.c., and may be double that quantity.

There is now an abundance of carefully secured evidence that the normal gastric juice of man has an acidity of between 0.4 and 0.5 per cent. hydrochloric acid, although the gastric content usually shows a lesser concentration. Carlson summarizes the best information now available by maintaining that in otherwise normal persons the gastric secretion may vary from hypersecretion, through normal, down to complete anacidity. These variations by themselves do not, therefore, produce disease symptoms. In chronic disorders, gastric secretion and gastric acidity are decreased, on the whole, parallel with the degree of general cachexia. The most important factor in this depression is probably the cachexia of the gastric glands. There is no disease known capable of inducing true gastric hyperacidity. The pathologic deviations in acid and pepsin concentrations are invariably in the direction of a decrease.

3. Siperstein, D. M., and Sansby, J. M.: Intraperitoneal Transfusion with Citrated Blood, Am. J. Dis. Child. **25**: 107 (Feb.) 1923.
4. Siperstein, D. M.: Intraperitoneal Transfusion with Citrated Blood, Am. J. Dis. Child. **25**: 202 (March) 1923.

1. Feinblatt, H. M.: Alimentary Leukocytosis in Eighty Normal Men, J. A. M. A. **80**: 613 (March 3) 1923.
2. Carlson, A. J.: The Secretion of Gastric Juice in Health and Disease, Physiol. Rev. **3**: 1 (Jan.) 1923.

Current Comment

THE COUNTRY DOCTOR—A LAY OPINION

In a whimsical essay, "Small Town Stuff," Mr. Burges Johnson laments the gradual disappearance of common sense, and ascribes its departure to the gradual movement of the population from the country to the urban community. The herding together of great numbers of human beings makes for the limiting and specializing of each person's experience. Physicians know the tendency to specialize in city practice, but it is doubtful whether any one has put the matter more humorously or revealingly into words than has Mr. Johnson. To quote:

> This conflict between specialization and common sense is well illustrated by the effect of a large city upon the learned professions. "To succeed here you must specialize," says the veteran doctor to his young friend. "Get to know a little more about the duodenum than anybody else in the city, and your fortune is made." So the young man moves forward up a straight and narrow road of learning, whose summit and crown is the duodenum and all that pertains immediately and directly thereto. Other roads may lead to epiglottises or vermiform appendices. Such roads and all the by-paths leading into them he must studiously avoid. The result is that he becomes a great practitioner in a great city. All sufferers as to the duodenum are sent to him, if they can afford it. Great practitioners upon the stomach or the eyeball or the something-or-other-gland refer to him as "my distinguished colleague." It seems almost sacrilegious to refer to him as a big toad in a little puddle, and yet think how small his puddle is! It is no bigger than the duodenum. A patient who comes to him with a commonplace and well located pain must either be persuaded that the pain really arises from the duodenum, or he must be sent to Dr. Jones up the street, whose highly trained and uncommon sense about such pains makes him the only other man in the city to see.

In support of his view, Mr. Johnson cites the statement of Dr. Veiga, out of whose mouth Arnold Bennett says, in "Mr. Prohack":

> "I'm admirable on the common physical ailments, and by this time I should have been universally recognized as a great man if common ailments were uncommon; because you know in my profession you never get any honour unless you make a study of diseases so rare that nobody has them. Discover a new disease, and save the life of some solitary nigger who brought it to Liverpool, and you'll be a baronet in a fortnight and a member of all the European academies in a month. But study colds, indigestion, and insomnia, and change a thousand lives a year from despair to felicity, and no authority will take the slightest notice of you."

Of course, the statement of Dr. Veiga is not to be accepted as strict fact. Freud has achieved greatness by concentrating on dreams, and a host of investigators have gained public notice by efforts at the cause of influenza. But there is just enough of satirical truth in it to gain it serious attention! This is particularly the case since Mr. Johnson is led by his consideration to a definite conclusion:

> The old fashioned country doctor whose chief asset was his common sense may be as out of place and impossible today as the little red schoolhouse of legendary memory. A more complicated civilization is making greater demands than either can now supply. And yet even today the best type of small town doctor is a better diagnostician than many of the great specialists who have bought their special knowledge at the cost of their common sense. The ignorances of the one may be balanced against the "accidents" of the others.

There are a number of specialists in the problems of medical education and the supplying of physicians to rural communities, who have arrived at the same conclusion as Mr. Johnson, after a more circuitous route of exhaustive investigation. It is interesting to have a fresh view of the subject from such a source, and it may be well to consider whether urban communities might not also be better served by a broad, rather than by a limited, comprehension of the human body and its disease.

MEDICAL LICENSURE IN MISSOURI

Missouri now has the opportunity of restoring better standards of medical licensure, the governor having signed the bill recently passed restoring the word "reputable" to the medical practice act in the reference to medical schools. About two years ago, a certain element succeeded in inducing the legislature to substitute for this word in the practice law the words "legally chartered." As stated in our editorial at that time,[1] the words "legally chartered" are meaningless, since the worst diploma mills that have ever existed have been chartered, but they have been very far from reputable. The effect of this change, therefore, was to take away from the licensing board the authority to refuse admission to its examinations to graduates of notoriously low grade medical schools. Unfortunately, the bill just enacted cannot correct the harm already done. It will, however, prevent the growth of the evil and encourage those who are striving so hard under many difficulties to maintain proper standards of medical education.

THE UBIQUITY OF BACTERIA

Micro-organisms are looked on by most persons as unfriendly neighbors from which there is no escape, and many have dreamed of far away lands where the smallest of living forms of matter are unknown. From various reports there is reason to believe that, far from inhabited regions, as on the great oceans or in the unexplored polar regions, the number of bacteria in the air is greatly reduced. That the micro-organisms are nevertheless present even in the virgin soils of the far north can no longer be denied in the light of bacteriologic studies. Barthel,[2] who has had an opportunity to examine samples collected by Wulff in the neighborhood of Cape York and also during one of Rasmussen's expeditions to the north of Greenland, has succeeded in isolating and identifying many familiar species. Not only in the previously untouched soils, but also in the contents of the intestine of arctic animals, is found a motley group of bacteria, yeasts and molds—most, if not all of them, familiar to us of the more contaminated zones. We must therefore admit the ubiquity of the common micro-organisms, whether in the torrid tropics or in Greenland's icy

1. Unfortunate Missouri, Current Comment, J. A. M. A. **76**: 1251 (April 30) 1921.
2. Barthel, C.: Recherches bactériologiques sur le sol et sur les matières fécales des animaux polaires du Groenland septentrional, Den II. Thule Ekspedition til Grønlands Nordkyst 1916-1918, 1922, No. 1.

regions; and in doing so let us remember that these lowly forms of life, while often baneful, are quite as frequently most beneficent to mankind.

THE EFFECTS OF RADIATIONS ON CELLS

Radiant energy, whether in the form of rays emitted by radioactive elements, especially radium, or in such manifestations as roentgen rays and ultraviolet light, is acquiring a rapidly growing importance in the work of the physician. The stimulus afforded by the various types of radiation may be beneficial or detrimental to biologic function, the outcome depending in part on the character and dosage, that is, the duration of exposure. For example, ultraviolet rays acting for a brief period on sugar cane may not only facilitate growth but also produce an increase in the content of sugar in the plant.[1] If, however, this optimal amount of radiation is overstepped, the plant being submitted to a longer exposure or to a greater concentration of rays, depression, culminating in complete arrest of physiologic function, is produced. The profound retrogressive changes produced by rays of radium on tissue cells is well known. The explanation for this phase of the reaction has been varied. Some investigators have reached the conclusion that the growth-promoting factors in cells can be inactivated by exposure to radiation; and the therapeutic usefulness of radium in checking the cell growth in tumors has been ascribed to such a destructive reaction. According to other observations, however, another cell factor may be altered. Thus, Packard[2] of the Peking Union Medical College has demonstrated on unicellular animals that one of the physical effects of the radiations is to increase the permeability of the cells by injuring the cell wall. If the treatment is continued long enough, the cells cytolyze completely. From this it follows that when cells are already highly permeable, as they are during growth and division, complete cytolysis quickly ensues; whereas, when the cell membrane is relatively impermeable, as it is in resting cells, radiation must be long continued before destructive cytolysis can be observed. It is only by the study of such details that we can hope to gain a larger insight into the major effects of radiant energy on living tissues.

1. Burns, D.: An Introduction to Biophysics, New York, the Macmillan Company, 1921, p. 126.
2. Packard, D.: The Susceptibility of Cells to Radium Radiations, Proc. Soc. Exper. Biol. & Med. **21**: 226, 1923.

Bedtime Stories.—It is an accepted fact supported by psychologists that one of the most effective methods of instilling right thoughts and habits into a child's consciousness is by stories told at bedtime, when the child's body is quiescent and the conscious mind drowsy with sleep. The subconscious self, which is then in control, may be molded, by suggestion, into what we desire it to be. The mistake is often made of relating at this hour tales of thrilling adventure and exciting wonder. By such stories, the child is wrought up to a nervous pitch that often persists throughout the night. The bedtime story should be one of Mother Nature, or one illustrating a certain trait of character desired in the child, and should be told with a calm voice such as induces a quiet restful sleep.—Moore, Nutrition of Mother and Child, J. B. Lippincott Company, 1923.

Association News

THE SAN FRANCISCO SESSION

Special Train of the Chicago Medical Society

Arrangements have been completed by the Chicago Medical Society to operate a special train by way of the Chicago and Northwestern, Union Pacific, Denver and Rio Grande Western and Western Pacific railroads from Chicago to San Francisco for the annual session of the American Medical Association. This train will leave Chicago over the C. & N. W. Ry., at 11:30 p. m., Thursday, June 21, and will arrive at San Francisco at 5:45 p. m., Monday, June 25. The train will be composed of the finest equipment, and the schedule has been so arranged that practically all the principal points of scenic interest, including Denver, Colorado Springs, Pueblo, the Royal Gorge, Salt Lake City and the Feather River Canyon, will be passed in the daylight hours.

For accommodation of the members of the Chicago Medical Society who will not find it possible to leave Chicago, June 21, a second schedule has been arranged whereby members and Fellows going to San Francisco may leave Chicago at 8:10 p. m., Friday, June 22, on the San Francisco Overland Limited and arrive in San Francisco at 2:30 p. m., Monday, June 25. Special sleepers will be attached to the regular Overland Limited for the benefit of members of the Chicago Medical Society.

Railroad and Pullman rates from Chicago and other Western cities were printed in THE JOURNAL, February 3. Reservations may be secured by communicating with Mr. H. G. Van Winkle, General Agent, C. & N. W. Ry., 148 South Clark Street, Chicago. Dr. R. R. Ferguson, secretary of the Chicago Medical Society, 25 East Washington Street, Chicago, represented that society in the completion of the arrangements for the special trains referred to above.

The House of Delegates Will Meet Monday, June 25

The House of Delegates will convene in San Francisco at 10 a. m., Monday, June 25. A number of special trains that have been arranged for the accommodation of Fellows of the American Medical Association will not arrive in San Francisco until Monday afternoon or evening. Members of the House of Delegates should, if possible, time their arrival in San Francisco so as to be present at the opening meeting of the House of Delegates on Monday morning.

Diagnostic Clinics at San Francisco

Diagnostic clinics as part of the program of the annual session will be held in accredited hospitals in San Francisco and Oakland on Monday, June 25, and Tuesday, June 26. Visiting Fellows and Fellows of the American Medical Association residing in California will take part in the clinics at each hospital. The San Francisco hospitals in which clinics will be held, and the names of the chairmen of the committees on diagnostic clinics at each hospital, are as follows: University of California Hospital, Wallace I. Terry; Lane-Stanford Hospital, George B. Somers; St. Joseph's Hospital, A. S. Musante; Franklin Hospital, Otto F. Westerfeld; French Hospital, George H. Juilly; Children's Hospital, Robert Langley Porter; Mount Zion Hospital, E. O. Jellinek; San Francisco Hospital, E. B. Frick; St. Francis Hospital, Bertram F. Alden; St. Luke's Hospital, L. J. Schermerhorn; Mary's Help Hospital, F. H. Rodenbaugh; St. Mary's Hospital, Thomas J. Nolan.

Hospitals in Oakland and the names of the chairmen of the committees are as follows: Fabiola Hospital, Daniel Crosby; Providence Hospital, O. D. Hamlin; Livermore Sanitarium, V. H. Podstata.

A central Committee on Diagnostic Clinics has been organized to harmonize and coordinate the clinics of each hospital so as to combine the results of all these clinics into a valuable review of progress in the diagnosis and treatment of a large variety of pathologic conditions. Dr. Walter B. Coffey is chairman and Dr. Edna L. Barney is secretary of this committee. The clinic program is practically complete for some of the hospitals, and plans are being perfected rapidly for the presentation of more than 100 clinics. Fellows

who are interested in these clinics and who wish to participate are invited to send their names and the subject of the proposed clinic to Dr. Frank Billings, secretary of the Board of Trustees of the American Medical Association, 1550 North State Parkway, Chicago, or to Dr. W. B. Coffey, chairman of the Committee on Diagnostic Clinics, 806 Balboa Building, San Francisco.

In addition to the clinics to be held in San Francisco and Oakland hospitals, a number of postconvention diagnostic clinics will be held in hospitals in other places in California on Monday and Tuesday, July 2 and 3. Further information about these postconvention clinics will be presented later in THE JOURNAL.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 854)

MEDICAL EXAMINATIONS AND LICENSURE

MARCH 5—AFTERNOON

DR. DAVID A. STRICKLER, Denver, President of the State Medical Boards of the United States, in the Chair

Enforcement of the Medical Practice Act

DR. H. M. PLATTER, Columbus, Ohio: It is comparatively easy for an administrative department to control the physician who transgresses, either through suspension or revocation of his license or by prosecution. The issue is clear, and the public supports it. Why is it, then, that when attempt is made to compel the cultist to conform to the same laws, we encounter opposition, not only from the cult organizations but also from citizens, many of whom are intelligent? While there is general agreement that high educational qualifications are necessary to practice medicine and surgery, just what is meant by that phrase is not clear in the public mind, and, therefore, a group of designing individuals may announce some new system of treatment without drugs or operative surgery, and by means of publicity delude the credulous and make them believe the discovery is not medicine or surgery and that any attempt at enforcement of the laws governing the practice of medicine as applied to them is the result of prejudice, bias and jealousy inspired by a mythical "medical trust." To a great part of the public, the phrase "medicine and surgery" means only the giving of drugs or the use of the knife. This narrow conception should be combated by us as individuals, as officials and as educators.

The practice of medicine and surgery means any agency whatsoever employed in the treatment of bodily injury, infirmity or disease. Massage, manipulation, hydrotherapy, electrotherapy and all the other single idea panaceas have been recognized by the medical profession as of value in a limited way for years, and not one of them can cure or relieve all conditions, and their employment in many conditions is worthless, even dangerous. The public regards the cultists as practitioners, whereas they should be classified in the public minds as *limited* practitioners.

Once the public understands that each system is in reality a *limited* branch of medicine and surgery, it will understand also that the field of operation should be limited, to be used only by intelligent persons in selected cases, and at no time should such practitioners in the eyes of the law or the public be placed on an equal plane with the doctor of medicine. I do not think it fair to condemn utterly any therapeutic procedure, nor do I know of any therapeutic panacea. The practitioner of medicine and surgery may use any means his judgment indicates in a given case; he would be foolish to discard all our discoveries and remedies save one, and attempt to employ it in every case.

The task of public education falls to the educator and to the health official. From the first should come a clear statement of the need of preliminary education and professional preparation necessary for medical practice. The various means of therapy that may be used in treatment of cases of a particular kind should be enumerated, and their limitations defined. The need of education in the fundamentals of the healing art, by which I mean anatomy, physiology, chemistry, pathology and diagnosis, is just as necessary for the cultist or limited practitioner as it is for the physician. The health official, through bulletins and the press, should emphasize that to administer his department efficiently he must have a cooperative and qualified profession; that control of epidemics and complete morbidity and mortality statistics require such qualifications, and that the permitting of unqualified and ignorant persons to care for the sick is a distinct menace to the public health.

Most of our laws are so wofully weak in their penalty sections that enforcement as applied to organized opposition is impossible, and I would recommend that the legal authorities of the several states be consulted and requested to put some action into the penalty section by which an individual offender, even though he is backed by an organization, may be promptly tried and punished. If it is possible for an offender, through appeal and release on bond, to continue in practice while the matter drags through the courts, no prosecution should be attempted generally; it should be reserved for flagrant violation.

I would call attention to the penalty sections of the Louisiana and Ohio laws. The former is superior in that it also includes procedure by injunction. Both are sufficiently active to cause consternation in the ranks of organized opposition, and I hope bring to successful realization the protection of the public.

In 1915, Ohio, in common with many other states, amended the medical practice act to permit the state medical board to examine and license persons desiring to practice a limited branch of medicine and surgery. Fourteen limited branches were specified. The state medical board was empowered to define each branch, make rules and regulations governing their practice, and inspect and recognize schools teaching limited branches. The board has had the assistance of all groups except the chiropractors. These individuals, through schools and associations, defied the department, and prosecution became necessary. In two years, twenty-eight were successfully prosecuted before a jury. Each appealed his case and continued in practice. In 1919 the penalty section was amended to eliminate trial by jury and to provide that each day's continuance in practice constitute a separate offense. Court procedures were invoked attacking the constitutionality of the law, the reasonableness of our definitions, rules and regulations, and administrative acts. All have been sustained. Since Jan. 1, 1923, we have been engaged in a program of prosecution of all unlicensed practitioners. Many have left the state; some are remaining in jail to pose as martyrs, while their sympathizers besiege and petition the legislators to deliver them from the "medical trust," and give them a special board of examiners. We believe their efforts will fail.

DISCUSSION

DR. KEMP P. B. BONNER, Morehead City, N. C.: There are two principal reasons for the failure of medical practice laws. First and most important is the failure of the public to appreciate that medical practice laws are for their protection and not for the protection of physicians. The public is beginning to think more seriously, however, of the importance of medical practice laws. For example, two editorials have appeared recently, written by Josephus Daniels, commenting on certain acts which were introduced into the general assembly granting special licensing legislation to individuals. Heretofore the medical profession has been inclined to cloak its methods, and to hold so aloof that the public did not understand the need of practice acts. The next reason for the failure to enforce medical practice laws is the weakness of the penalty sections. A clear definition should be inserted in every penalty section of the medical practice act of every state, because this penalty section is what is presented to the jury in the prosecution of violators of the medical practice act. If the penalty section includes no definition, the jury is free to make its own definition to fit the particular case. That has been a drawback in practically every one of our prosecutions. We could not convict the defendant, because the penalty section was silent as to what constitutes the prac-

tice of medicine. A universal fault in the penalty section of various states is the insertion of the fee and reward clause. It is absurd to place the burden of truth on the party receiving compensation for service rendered, and to imply that he is not guilty because he did not receive money for it. The state should not be interested in what a man receives for service; it is a question of incompetent service. The practice acts of four states in the Union have fee and reward clauses which defeat conviction under the penalty section. In one state, besides the fee and reward clause the act states that a man is not practicing medicine unless he uses some poisonous drug. He can use any drug he pleases so long as it is not poisonous. The enforcement of the medical practice law is best secured through a commission, a board of examiners, or some official body representing the state.

DR. SAMUEL W. WELCH, Montgomery, Ala.: The public is not entirely in sympathy with the idea that medical practice laws are made in the interest of the public, and the cry of the cults, that a medical trust is behind these prosecutions, finds favor with the average jury. We have a great deal of trouble in enforcing violations of the medical practice act against doctors. We had no difficulty until the chiropractors came along. As fast as we put them in jail they appealed to the supreme court, and the supreme court decided that it was a violation of the medical practice act. Each one appealed his case, and in the meantime kept on practicing just the same. I do not know just how we in the Southern states are going to handle the chiropractor invasion. It is the only thing that is giving us trouble. Osteopaths have begun to raise their standards, and are fairly respectable. We have only one examining board in Alabama, and only graduates of Class A medical schools are allowed to be examined by our board. Not a single failure has been registered against any graduate from a Class A school since we adopted that rule in 1918. Prior to that time three fourths of the applicants had failed. I believe that the best way to stop violation of the medical practice act is by injunction.

DR. CHARLES E. HUMISTON, Chicago: The whole country owes much to Ohio for the manner in which it has administered its medical practice act, and for the medical practice act itself. A medical practice act can be enforced the same as any other act, if it is reasonable and brought to the attention of those whose duty it is to enforce laws intended for the protection of the citizens of the state. While I have not had much to do with the enforcement of any medical practice act for Illinois, I took occasion to inform myself as to the conditions in other states and the laws which the other states have. Illinois has a civil administrative code. Our medical practice act must be administered by a layman; this is a step in the wrong direction. It takes a professional man to understand professional questions. The courts generally recognize the treatment of any human ailment by any means whatsoever as the practice of medicine. While the fee and reward clause is useful, it should not dominate the definition. It can be used in some way so that mercenary persons treating the sick by questionable means for money would be reached only by this means. They treat disease under the guise of religion, which can be reached in that way. The medical practice act under conditions in Illinois must not be discriminatory. We have formulated such a bill. As to methods of treatment of disease, we say nothing in the bill except to restrict those to a particular form of treatment, which the license may do, and place a penalty on any method of practice other than the one for which the individual holds a license. The bill we have prepared not only recognizes every one treating the sick in any way, but also recognizes the fact that the practitioner must have a fundamental knowledge of the subject and a knowledge of the human body in sickness and in health, and whoever seeks and asks this high privilege must approach it on the same scholastic plane as every one else. Physicians should help the public to understand what they are doing for the public, and then they will not be misunderstood and maligned as they have been in the past.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.; For thousands of years there has developed from time to time, and always will develop, some cult taking up some discarded or neglected function of medicine. Cults have developed because we have failed to use the knowledge we have for the benefit of sick people generally and specifically. Our medical ancestors were just as violent against our homeopathic and eclectic friends, because they were trying to do something we did not believe in. We thought at one time that they were just as bad as the chiropractors or the osteopaths. The better element of those who become members of any of these cults will have enough influence after a little while really to educate their cults. In Kentucky we recognize all cults or systems under the law. They are given the same examination in the fundamental branches. Whereas we had at one time 267 osteopaths, we now have only twenty-five or thirty in the state. The majority of the osteopaths have graduated in medicine and are now practicing it. It is very important that we carry on educational propaganda with the public and point out the importance of enforcing the medical practice act, which is for the purpose of protecting public health. We are not protecting physicians. We have lots of prosecutions for violation of the medical practice act that are not carried through because we fail to convict, but we ruin a man's reputation by testimony. If a chiropractor or osteopath, after failing in his examination, practices, he is prosecuted. We file his examination papers so that the jury will know he did not know anything. Our lawyer appeals to the jury on that basis, and not infrequently we have a rough and tumble fight. The population in that neighborhood turns out to hear the trial, and our attorney, an ex-governor of the state, a real leader of men, when he gets through, has educated the public to the importance of enforcing the medical practice act.

DR. THOMAS J. CROWE, Dallas, Texas: I have had some recent experience with medical legislation, and I know just what you can do with legislators. After having studied this question for about twenty-two years, I have arrived at the conclusion that one solution of this medical problem, and the only one that will be successful for very long, is a single standard for every man or woman who pretends to treat the sick. You cannot regulate the practice of medicine by legal enactment. Every man who is granted a license, limited or unlimited, will practice everything he knows when he becomes a legalized practitioner. He will give morphin if he thinks the patient requires it. All our men receive the same license, and all are privileged to practice whatever they please, so that a legalized osteopath can give morphin to a patient if he desires. You may not be quite ready for it now, but ultimately you will come to the conclusion that after you have properly established a fundamental education, you can let the question of practice settle itself. The individual practitioner will use his judgment.

Some Needed Revisions in Medical Licensure in Accordance with Present Day Medical Education

DR. KENDRICK C. BABCOCK, Urbana, Ill.: This article will be published in full in THE JOURNAL.

DISCUSSION

DR. W. S. LEATHERS, University, Miss.: The licensing boards have in a large measure followed in the wake of the requirements of the Council on Medical Education and Hospitals of the American Medical Association and the advanced standards of medical education in our medical schools. The licensing boards are following these standards rather than setting standards for the colleges or the Council, and for that reason it appears to me that a revision of the requirements of the licensing boards should be made from the standpoint of a number of things. In the first place, the licensing board is passing through a transitional stage just the same as many other things in medicine. There was a time when the examining board was especially important to prevent unqualified students from practicing medicine; that was one of the outstanding functions of the board. At that time the examining board served as a stimulus to correct defects in medical education and in medical colleges; but since the Council on Medical Education and Hospitals, in cooperation with the medical schools, has greatly advanced the standards of medical education, it is no longer necessary for examin-

ing boards to shoulder the responsibility of correcting the defects in medical education in medical schools. Students who graduate from Class A medical schools and have been examined by men who are experienced examiners, and have been given the thorough training that is guaranteed by these institutions, should not be required to stand a further examination to practice medicine. I hope that the time will rapidly come when graduates from A grade schools will not be required to stand an examination before any examining board.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: I cannot agree with Dr. Leathers that men who are the graduates of Class A schools should not submit to examination. We cannot ask of our legislature to provide for such discrimination. I believe, however, that we can accomplish the same results if the examining board in each state will associate with the faculties of the institutions in that state and supervise examinations in such a way that they can accept the examinations as legal. For instance, the Illinois board might supervise the examinations given in such institutions as Illinois and Rush, but conduct separate examinations for institutions when the character of the examinations and standards is doubtful. I look forward to the time when it will not be necessary to impose the regulations that Dr. Babcock refers to of requiring an exact number of hours that were necessary at one time. Some schools are still so commercially inclined, however, that an attempt might be made to let students slip by without adequate preparation. Every state board, as rapidly as possible, should recognize that the colleges in Class A are themselves competent to determine the medical curriculum, and we should gladly look forward to the time when the medical institutions will reduce the curriculum and eliminate a lot of things that are now so much dead wood and are not of practical educational value.

DR. THOMAS MCDAVITT, St. Paul: All of these laws should cover only fundamental points. A medical practice act should not enter into detail, but should lay down the fundamental facts to manhood and leave the board with enough elasticity to take in all the points that are raised by Dr. Babcock. We blunder along in our medical practice legislation by putting too much in it. As to recognizing the Class A or Class B medical schools, and of excusing their graduates from the examinations, it is out of the question because it is purely class legislation.

DR. WALTER E. LEE, Darby, Pa.: As one of the younger workers on the Pennsylvania state board, my impression, after a few examinations, has been the uselessness of these examinations of graduates. In a conference with the deans of the various schools in our state, I was told that almost invariably the men we turned down in our examinations were those who they anticipated would fail. In one examination there were five men turned down, and when the dean was told that he had five men fail, he named them one after another. The medical colleges are far more competent than we are to judge of the character of men they present to us. We asked them why they send these lame ducks up for state board examinations, and they said that as practical physicians they were competent, but they feared their ability to pass theoretical examinations. Our examinations in Pennsylvania cannot be practical with 200 and 300 men to examine, and they do not compare with the practical examinations which are given by the national board with the few candidates that come before it. A tentative plan which has been discussed is that the state board be furnished by the deans of colleges with the final ratings in the freshman, junior, sophomore and senior years of any of these men as they pass through their undergraduate training, and those that pass during the four years a certain grade be given an exemption for the hospital year to the state board of Pennsylvania. This will eliminate nearly 80 per cent. of those we examine.

DR. BURTON D. MYERS, Bloomington, Ind.: There is one problem the medical schools of America are facing today which members of examining boards may not be acquainted with. Many of the A plus schools are turning away from their doors hundreds of young men who a few years ago would have been admitted. Where do these young men go? Where can they go? I believe the A schools could find some way of increasing the number of medical students they can take. That can be done by increasing the physical equipment or by doubling the size of the plant. Some of those men who come to us could perfectly well complete their medical course in three years if it were not for the trouble they get into when they come up for examination. If medical education today were organized on the quarter system, so that a student could begin his medical course at two different times during the year, manifestly a greater number of students could be cared for during the year. We could have two groups running at the same time, and the best of these groups could complete their course in three years.

DR. KENDRICK C. BABCOCK, Urbana, Ill.: As dean of a college of liberal arts and as an adviser of premedical students, I know something of how these fellows are looking at the problem, and I know very well the difficulties they are up against. They are perfectly honest, capable, strong thinking fellows, who are desirous of getting into medical colleges, but many of them are blocked by a waiting list. They talk with me during the freshman year as to where they are going to get in, not where they are going to get off, and take their chances with the rest. The matter of adjusting the curriculum to accommodate more students is going to be an expensive one. Every institution considers that it costs a good deal more money to use a plant all the time. You have to have some one to do the work, but it is a serious problem for young fellows where they are going to get their medical education.

The Hospital Intern Year as an Essential for License

DR. ALEXANDER MACALISTER, Camden, N. J.: Among the fundamental changes for betterment of medical education are the higher requirements for entrance into the professional school. Most, if not all, of our institutions today demand two years or more of college work of those who are admitted. This better preparation is reflected in the better type of medical student. The school term now consists of nine months, the course has been lengthened to four years, and many states require at least one year of hospital intern service before admitting students to the state board examinations and granting a license to practice. The requirement of a hospital intern year is still a matter of discussion. Its advantage, not to say its necessity, is so apparent that no arguments are needed in its favor. It is a great step in advance to have the prospective practitioner have his early actual experience in practical work under the guidance of experienced members of hospital staffs, to say nothing of the advantage to the patients who are not so often subjected to the danger of being experimented on by the tyro in medicine or surgery. One year of such practice does not make a physician, but the varied experiences and the degree of responsibility it entails are of inestimable value in developing self-reliance and conscientious work. The question of the supply of physicians throughout the country is not so much one of more physicians as of better physicians; and with the tendency to raise the standard of medical education, including the year in training in practical work, there is some chance of supplying this demand. One year should be the minimum requirement. Unfortunately, the economic question is an insistent one, and many of our embryo physicians cannot afford more than the year demanded for this minimum. It should not be reduced where it is in existence, and should be a law in every state. It were well also if there were some uniformity with regard to the essentials of intern service throughout the country. The minimum demanded in Pennsylvania represents what the minimum requirement should be. The Pennsylvania board demands a fifth year of instruction in medicine, consisting of an intern service in a hospital of at least seventy-five beds with medical, surgical and obstetric departments; the intern to serve at least six weeks in each department, during which time he shall have been in attendance or participated in at least six confinements. The hospital should also offer instruction in anesthetics and laboratory work, both clinical and pathologic. Pennsylvania recognizes and gives credit for a six months' service in hospitals having a fixed general staff representing all or most of the departments of medicine, but in which the work performed is largely either surgical or medical, with proportionate oppor-

tunities for laboratory experience. It also recognizes a three months' service in special hospitals, capable of giving a competent and valuable training in certain special lines which they cover: such as hospitals for the insane, for tuberculosis, for contagious diseases, children's hospitals, eye and ear hospitals, orthopedic hospitals, cancer hospitals, and the like. Standardization along these or similar lines together with compulsory intern service in all states would help to increase the supply of good physicians. Such standardization would also go a great way toward avoiding friction and increasing cooperation among the various states, since an internship served in one state would be recognized by other states. With the hospital standardization program established by the American College of Surgeons, as the minimum that is recognized throughout the country, the opportunity for adequate intern service is considerably enhanced and there is reasonable assurance that the chances for adequate practical work will be good. It is only a natural step from hospital standardization to standardization of state programs for granting of license to practice, and I have no doubt that this necessity will gradually become apparent, and that among the standard requirements will be an intern service of at least one year as an essential for license.

DISCUSSION: REPORT ON INTERN TRAINING

DR. I. D. METZGER, Pittsburgh: Investigations of medical boards and other interested organizations indicate certain definite problems which need immediate consideration: 1. A clear, definite conception of the province of the hospital as an educational institution. 2. A more or less uniform organization in hospitals which shall offer the best possible care to patients with a maximum amount of helpful information and experience for professional attendants. 3. A systematic course of instruction which mutually aids the patient and student. 4. An adequate equipment for all needful investigations and a record system which tells all essential information pertaining to the case. 5. A type of internship which will render the best training in every department of medicine and will vouchsafe to the community safe, sane, well-informed, well-balanced, responsible, general practitioners of medicine. 6. A catalogue of hospitals in America which indicates the type of service given to interns in each, and which is formulated after an intelligent standardization on the distinctive type basis. 7. An earnest consideration by states, not now requiring it, of the value of the intern year, with a speedy readjustment in legal and medical technicalities so as to make it possible throughout the country. 8. Hospitals to be so sensitized to the requirements of the community that they will be not only rescue centers, but also health centers, from which are sent faithful servants in the care of the sick as well as effective harbingers of disease prevention and of health preservation.

DR. N. P. COLWELL, Chicago: In 1912, we made a survey of the hospitals which were willing to take graduates as interns, and found there were not enough hospitals at that time to provide internships for those who wanted them. Since then, however, the number of hospitals has tremendously increased. Many new hospitals have been built and others have been enlarged, so that they require larger numbers of interns. At present, therefore, more hospitals seek interns than can be supplied from the present number being graduated each year from the various medical schools. That disproportion may not continue to be so marked, since the indications are that within the next three years the number of graduates will be greatly increased. The number graduated this year was small—those who entered in 1918, the war year. Based on the numbers of students enrolled in the next three classes, there will be about 3,000 graduates this year; 4,000 or more in 1924, about 5,000 graduates in 1925—the largest number since 1906. For that reason there may be enough graduates to supply the hospitals that are worthy of obtaining them. Some hospitals which want interns should not have them. All hospitals should be investigated to see which are in position to provide a satisfactory training for interns. In some hospitals the interns are merely orderlies, or are turned loose in the hospitals, without instruction or supervision, and therefore get little out of their internships. An internship ought to be a year of more advanced instruction than the last clinical year in a medical school; and if it can be made that, it will be of real value to any graduate.

DR. WILLIAM DICK CUTTER, Albany, N. Y.: When we issue a license to a man to practice medicine, we by no means certify that he is competent to practice medicine in all its phases and qualified to deal with emergencies that may arise in the course of his practice. If we certified to any such thing as that, we would have to extend the course of training to five or ten years more than at present. I should like to quote the words of President Hadley to one of the graduating classes at the Yale Medical School. He said: "Young gentlemen, your education is not now completed but only just beginning. Do not think you have learned to practice medicine. You have acquired merely the tools of medicine; you get your education as you go out into practice, and we hope you have been so taught to use these tools that you will learn to do things correctly." I agree with Dr. Colwell that a year of internship, if it is required, should be a period of instruction, not merely a period of service as an orderly in a hospital. At present, however, in very few hospitals is the work so arranged that an intern really acquires any additional instruction, experience or responsibility which is at all commensurate with the time he is obliged to give. Before we undertake to require that our medical students should go through this period of training, we ought to be in a position to tell them where their time can be profitably spent.

DR. WILLIAM PEPPER, Philadelphia: I am sorry to hear the last speaker in a way cast discredit on the hospital year, because I think it is the most important year of all. We all acknowledge and admit that it is not what it might be or what we should like it to be. We cannot control these outside hospitals. We cannot say that all these staffs have proper instructors, but what we can do is to improve them. The best way to improve teaching hospitals is to improve the work which the interns get there by some sort of control. About ten years ago I read a paper in favor of the state control of the intern year, and I am still in favor of that method of requiring that year. Pennsylvania, through its medical board of examiners, has done a great deal to improve matters in the hospitals of the state. Our graduates who go into intern services in the hospitals of the state are getting better service than they did. When this law went into effect, the hospitals thought it was a good thing for them because it gave them control over the interns. They now find they are the ones who must improve, and the state board has control over them more than it has over the interns. Before the law went into effect, nearly all the graduates in the schools of Pennsylvania had served internships, so that it did not force, except in a few instances, a man to take that important year of work. I look on the state law as justly beneficial on account of what it has done to improve matters in hospitals.

DR. THOMAS J. CROWE, Dallas, Texas: We made an effort to get the hospital year as a statutory qualification in the medical practice act of Texas, but find that the legislature is not yet prepared for it. I believe that in the study of this matter we have been too specific about some things in our qualifications. I believe we have hampered a great many ambitious men by being too specific in our two year premedical college requirement. I know some young men who have been kept out of medicine because of that specific requirement. The man that has pride, the man that can get along and get through in less time, should be taken care of.

DR. AUSTIN A. HAYDEN, Chicago: I am very much interested in the administration of the fifth year or hospital intern year. It seems to me that, rather unawares, a new medical school has been formed in the United States which very soon will be national in character. This new medical school, as Dr. Colwell has informed me, will have this year a membership of about 3,000. Next year it will be 4,000, and the following year about 5,000. The faculty to a considerable extent consists of men who are doing general practice or men who are not connected at present with teaching institutions. When you come to see the number of hospitals that are not connected with medical schools that house interns and instruct them, you will find that the majority of interns are receiving

their fifth year of instruction in that sort of institution. I believe that the proper regulation or proper standardization of that year constitutes perhaps the most important medical educational problem the profession, as well as state examining boards, has to do with. By all odds the fifth year is the most important year of the entire five. Medical students themselves are a factor in deciding the desirableness of a hospital internship. Verbal information has been handed from one intern to another that a certain hospital has been deemed desirable or undesirable for interns. The hospitals in Chicago are mostly of the rotating type of service and of one year's duration. It is most desirable to establish this type and length of service as the standard for the fifth year requirement. The single service is not an adequate preparation for the graduate of medicine. The special and single service hospitals should be reserved for postgraduate use.

DR. S. G. DAVIS, Grand Rapids, Mich.: This discussion has been of the utmost importance to me. A few years ago the American College of Surgeons, without any particular authority, attempted to introduce into the hospitals of the country a standardization program. You are all aware of the trials and tribulations they have had in attempting to secure anywhere near 100 per cent. perfection. They set up minimum standards and sent investigators to determine whether the staffs were beginning to live up to these standards. Last year, at one hospital session in one of our states, it was said that there were not three of all the hospitals in the state where the staffs were fulfilling 90 per cent. of the requirements of the American College of Surgeons; yet it has done a great deal toward improving the practice of medicine where a standard has been established in hospitals. From my knowledge of hospitals throughout the country, the intern is getting the poorest and lowest type of training. In all honesty and fairness to the medical student, those states that demand a fifth year should standardize the service and the teaching of the intern in the hospital that he goes into. If the staff is not able to set up standards, then that hospital has no right to an intern, nor has the state a right to permit that young man to go to that hospital.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

County Hospital Opened.—The Mobile County Tuberculosis Sanatorium, at Cottage Hill, was formally opened to the public, March 4. More than 1,000 persons attended the opening exercises, and each person, as requested, brought a book for the hospital library. Dr. Lee W. Roe and Dr. Edward S. Sledge will be the attending physicians at the new institution.

ARIZONA

State Tuberculosis Association Elects.—At the annual meeting and banquet of the Arizona Antituberculosis Association, February 15, the following officers were elected: president, Gen. John C. Greenway, Douglas; vice presidents, Drs. Samuel H. Watson, Tucson, John W. Flinn, Prescott, and the Rev. B. R. Cocks, Phoenix; treasurer, Dr. William Warner Watkins, Phoenix, and secretary, R. C. Cuvellier, Phoenix. Arthur J. Strawson of the National Tuberculosis Association addressed the assemblage.

CALIFORNIA

Higher Requirements for Pharmacists.—Senator Crowley's bill for higher standards for pharmacists was favorably reported out of the senate public health and quarantine committee, March 9. The bill requires of applicants for license to practice pharmacy a minimum age of 21 years, American citizenship, and a five years' college course. The state board of pharmacy is backing this measure.

California Institute of Technology Given Endowment Fund.—Mr. Arthur H. Fleming of Pasadena, for many years president of the board of trustees of the California Institute of Technology, has recently given to the institute $4,200,000 as a permanent endowment fund. This, with previous donations, makes a total of more than $5,000,000 given by Mr. Fleming. Conditions made by the donor are that the institute limit its enrolment to not more than 2,000 students, and that it continues to specialize in research in chemistry and physics.

County Medical News.—Orange County has appointed Dr. William Leland Mitchell as full-time health officer.——Monterey County has appointed Dr. Bailey T. Tally as county health officer on a full-time basis. Dr. Tally, formerly of North Carolina, has been selected county health officer of Monterey County to succeed John A. Beck.——The Riverside County Medical Society gave a banquet to Dr. John C. King, Banning, on his retirement from active practice, and decided to form a medical library to be known as the John C. King Memorial Library.

CONNECTICUT

Personal.—Dr. Millard Knowlton has been appointed epidemiologist of the Connecticut State Department of Health, beginning April 1.——Dr. Ethel C. Dunham, instructor in the department of pediatrics at Yale School of Medicine, New Haven, read a paper on "Earliest Signs and Symptoms of Rickets," before the New Haven Medical Association, March 20.——Dr. Howard A. Kelly, Baltimore, who was a guest of the staff of Grace Hospital, New Haven, held a surgical clinic at the hospital, March 16. A dinner was given for Dr. Kelly at the Graduates Club.——Dr. William S. Miller, associate professor of anatomy at the University of Wisconsin Medical School, Madison, gave a series of lectures, March 7-14, at the Veterans' Bureau Hospital, New Haven, in connection with the school of tuberculosis.

FLORIDA

New Medical Society.—The Jacksonville Medical Society, recently organized, met, March 6, to adopt a charter and elect officers. Dr. Perye E. Watts was elected president, and Dr. Alvah H. Weathers, secretary-treasurer. Forty-six physicians of Duval County comprise the new society.

GEORGIA

Hospital News.—Work will start at once on the $300,000 Steiner Memorial Hospital to be erected at Atlanta. The hospital will be used for the free treatment of cancer, and will be operated in conjunction with the Grady Hospital.——The Carrollton Memorial Hospital at Carrollton has been closed owing to lack of funds, it is announced.

HAWAII

Medical Society of Hawaii.—The annual meeting of the association will be held in Honolulu, April 28-30, under the presidency of Dr. J. E. Strode. Dr. W. K. Chang is secretary.

New Building for Queen's Hospital.—A new four-story concrete addition is under construction at Queen's Hospital, Honolulu, which will increase the capacity to 256 beds, and makes this the largest and most modern hospital in the islands of the Pacific. The approximate cost of constructing the addition will be $500,000.

ILLINOIS

Full-Time Health Officer for Peoria.—It is reported that the city council in Peoria has appropriated $4,500 for the annual salary of a full-time medical health commissioner, and $1,800 for a full-time experienced milk inspector.

Addition to St. Margaret's Hospital.—An addition to St. Margaret's Hospital, Spring Valley, will be erected at a cost of $110,000. The new structure will be six stories high, and will join the north end of the present building. The work is to be completed by December 1.

Personal.—Dr. Edward V. Anderson, Woodstock, for forty-two years physician to the McHenry County Poor Farm, has resigned and will reside in San Diego, Calif.——Dr. Daniel D. Raber, Bloomington, was reelected county physician for the third term by the board of supervisors, March 7.

Whooping Cough Test at Lincoln School.—Through the cooperation of the state department of public welfare, the department of public health is studying the intracutaneous test for the early diagnosis of whooping cough, at the

Lincoln State School and Colony. More than a hundred tests have already been made.

Physicians and Undertakers Fined.—Drs. William F. Lambkin of Watson and Harry A. Dimond of Dietrich were fined $5 and costs recently, for failure to report births in accordance with the law. J. A. Johnson of Effingham and George W. Markwell of Newton, undertakers, paid fines in the same amount for violating the law which requires the obtaining of burial permits prior to interment. Court action in each case was instigated by a special field agent of the state department of public health.

Society News.—The Montgomery County Medical Society, at the annual meeting at Litchfield, elected Dr. Christian H. Zoller, Litchfield, president, and Dr. Charles H. Lockhart, Witt, secretary-treasurer.——Dr. Bransford Lewis, St. Louis, was the guest of honor at a dinner given by the Adams County Medical Society at Quincy, March 12. Following the dinner, Dr. Lewis gave an illustrated lecture.——Dr. Edwin W. Ryerson, Chicago, professor of orthopedics at Rush Medical College, was the principal speaker at a meeting of the Rock Island County Medical Society, March 13, at Moline.

Health Promotion and Safety Week.—April 22-28, inclusive, has been set aside by a proclamation of the governor for the annual observance of health week in Illinois, the occasion to be known as "Health Promotion and Safety Week." The safety feature has been added with the idea of bringing strongly to public attention the importance of preventive measures against automobile accidents, which have increased at an alarming rate in the state. The other items on the program will relate chiefly to public health measures, such as frequent physical examinations, maternity and child hygiene promotion, the application and extension of sanitary measures and the importance of safe milk supplies. A definite program for the occasion has been worked out by the state department of public health, and information relative thereto may be obtained on application.

Chicago

Psychologist Arrested.—It is reported that Premel E. Adoros, teacher of psychology and head of the Transcendent Scientist Society, was arrested, March 17, for violating the medical practice act, after he had prescribed for a patient.

Dr. Geraghty Addresses Medical Society.—Dr. John T. Geraghty of Baltimore addressed the Chicago Medical Society, March 28, on "The Present Status of the Treatment of Malignant Diseases of the Prostate and Bladder." The address followed a dinner in honor of Dr. Geraghty given by members of the society at the Hamilton Club.

Improved Medical Service for Prisoners.—Under new regulations adopted by the sheriff, prisoners with venereal disease, will be segregated, and provision made for a venereal disease clinic to be held in the jail under the direction of the city health department. At a meeting, March 28, plans were outlined for more intensive medical service in the jail, the details to be worked out by the city health commissioner.

Coroner to Investigate Deaths from Tuberculosis.—On and after April 1, 1923, the coroner of Cook County will prohibit the health department issuing burial permits for persons reported dead from tuberculosis unless the cases had been reported previously as tuberculosis. The coroner will investigate all such cases to establish the cause of death. During 1922, says the president of the board of directors of the Municipal Tuberculosis Sanitarium, the death certificate constituted the first report in too many of these cases. The usual explanation for failing to report cases is that physicians are called in at the termination that the family may obtain a death certificate and thus a burial permit. "There should be no reason why a doctor should feel that he must sign a death certificate on a case which has not been under his care and treatment, but has been treated by some cultist, who under the law has no power to sign a death certificate."

INDIANA

Hospital News.—April 30 to May 5 has been set aside for a state-wide campaign to complete the building fund of the James Whitcomb Riley Memorial Hospital, Indianapolis, it was recently announced.——The Deaconess Hospital, Indianapolis, has been purchased by the Ohio and Senate Realty Company. The property will continue to be operated as a hospital.

Pictures of Trip to San Francisco.—The Indianapolis Medical Society at a meeting, March 13, displayed five reels of motion pictures of the trip planned for physicians who attend the Annual Session of the American Medical Association at San Francisco. Dr. Charles R. Sowder, chairman of the legislative committee of the society, spoke on "Medical Legislation Passed and Its Future."

IOWA

Gift for Child Welfare.—The Rockefeller Foundation has given $22,500 to the Child Welfare Research Station of the State University of Iowa, of which Prof. Bird T. Baldwin is director. This sum will be received in three instalments over a period of three years.

LOUISIANA

Medical Meeting Postponed.—The annual meeting of the Southern States Medical Society has been postponed until April 24-26, according to Dr. M. W. Swords, secretary of the state board of health. The society was to meet, April 14, but will be postponed until the return of Dr. Oscar Dowling, who is now in South America.

MARYLAND

Medical Meetings.—The medical societies of Johns Hopkins Hospital, honored the memories of Louis Pasteur and Edward Jenner, March 26. Dr. Simon P. Flexner of the Rockefeller Institute and Dr. William H. Welch addressed the meeting. Dr. Henry B. Jacobs exhibited rare volumes from the pen of Pasteur, and presented prints and portraits pertaining to his life.

Personal.—The state health commissioner has appointed the following physicians on the staff of the Children's Dispensary, to be maintained at the Robert Garrett Hospital for Children: Dr. Henry L. Sinskey, director of the eye and ear clinic; Dr. W. Raymond McKenzie, in charge of the nose and throat clinic, and Dr. Gustav H. Woltereck, pediatrician.——Dr. Kyle W. Golley has been appointed superintendent of the Mercy Hospital, Baltimore, the appointment to become effective, July 1.

MASSACHUSETTS

Admission of Voluntary Patients to Hospitals for Insane.—The following regulations for the admission of voluntary patients to hospitals for the insane have been formulated by Dr. Kline, commissioner of mental diseases:

No person shall be admitted as a voluntary patient who can be regularly committed by the courts as an insane patient.

No minor shall be received as a voluntary patient in any asylum.

No patient shall be admitted as a voluntary patient unless he or she is fully competent to understand the conditions of admission and is fully aware of the fact that immediate release can be secured on request.

Every person admitted as a voluntary patient must first have signed his or her own admission petition.

If at any time the patient signifies his or her desire to leave, the officer must at once supply the patient with a written application for release.

MICHIGAN

Narcotic Measure Passes.—Representative Burn's bill making it a felony to sell or have in one's possession any habit-forming drugs, was finally passed by the house, March 14. The measure, as well as making the offense a felony instead of a misdemeanor, has a search and seizure clause, with the same scope as that applying to the liquor laws. The bill will go into effect immediately.

MINNESOTA

Staff for Shriners' Hospital Appointed.—The staff for the Twin City Shriners' Hospital for Crippled Children, Minneapolis, was approved by the board of governors, March 3. Dr. Wallace Cole, St. Paul, will be surgeon-in-chief. The following physicians will be among those on his staff: Paul W. Giessler, Iver F. Selleseth, Alexander R. Colvin, Carl C. Chatterton, Frederick A. Olson, Harry B. Zimmerman, James T. Christison, Frederick C. Rodda and C. Eugene Riggs.

Personal.—A banquet was given by the staff to Dr. Henry M. Bracken, head of U. S. Veterans' Hospital No. 68, Minneapolis, on the occasion of his transfer to the Veterans' Hospital at Atlanta, Ga.——Dr. Milton J. Rosenau, Harvard Medical School, Boston, gave the annual address of the Alpha Omega Alpha Honorary Medical Fraternity in Minneapolis, March 7. His subject was "Food Poisoning."——Dr. Leverett D. Bristol, professor of public health and preventive medicine at the medical and graduate colleges of the University of Minnesota, Minneapolis, has been appointed county health officer for Cattaraugus County. Dr. Bristol

will be in general charge of the tuberculosis and public health demonstration which is being carried on in Cattaraugus County with the assistance of the Milbank Memorial Fund.

MISSOURI

State Association Changes Date.—Dr. E. J. Goodwin, St. Louis, secretary of the Missouri State Medical Association, announces that the annual meeting of the association will be held in Joplin, May 8-10, instead of May 9-11, as previously announced.

Clinical Society Organized.—The Kansas City Clinical Society was recently organized to develop the educational advantages of the clinical material of Kansas City and to coordinate the clinics of greater Kansas City that they may be available throughout the year to visiting physicians. Officers of the society are: president, Dr. Edward H. Skinner; vice president, Dr. L. F. Barney; secretary, Dr. James R. McVay, and treasurer, Dr. Joseph Kimberlin.

NEBRASKA

Omaha Physician Sentenced.—Reports state that Dr. John T. Mathews, Omaha, aged 70, was sentenced in the district court, March 12, to five years in the state penitentiary on a charge of causing the death of Miss McDermott, of Basset, through an illegal operation. Dr. Mathews will appeal to the state supreme court.

NEW YORK

State Hospital Commission.—An inspection tour of the thirteen hospitals for the insane in the state by the state hospital commission started March 13. The purpose of the tour is to outline a plan to relieve overcrowding.

State Hospitals to Be Fireproof.—State Architect Sullivan W. Jones has started on plans to make the various state hospitals fireproof. The Manhattan State Hospital on Ward's Island, which was recently burned, will be rebuilt and made fireproof throughout. There is $250,000 available for the work which will begin within a month.

New York City

Tenth Harvey Society Lecture.—The Harvey Society announces that its tenth lecture will be given, April 14, by Professor Otto Meyerhof, University of Kiel, Germany, on "Auto-Oxidation Processes of the Cell."

Fund for Pediatrics.—The College of Physicians and Surgeons of Columbia University has received $5,000 from William Perry Watson, consulting medical director of the Prudential Insurance Company of America, for a permanent fund for pediatrics. The annual income of the fund will be given to the member of the graduating class doing the most valuable work in diseases of infants and children during the regular course at the college.

Postgraduate Medical Courses.—Graduate courses for physicians in Brooklyn will be instituted at seven borough hospitals, April 16, through the joint efforts of the Kings County Medical Society and the Long Island College Hospital. The institutions in which teaching courses will be given are Brooklyn Home for Consumptives, Greenpoint Hospital, Jewish Hospital, Kingston Avenue Hospital, Long Island College Hospital, St. Catherine's Hospital and Wyckoff Heights Hospital. Thirty-five courses have been planned.

Chiropractors Protest.—More than 700 chiropractors of Brooklyn and their friends met recently to protest against what they term "the insidious propaganda of the medical profession" which they assert is keeping them from winning legal recognition in New York state. They approved a bill offered in the Assembly last week by Assemblyman Peter A. Leininger of Long Island City giving state recognition to chiropractic. Ways and means were outlined for bringing the measure to the attention of the legislators.

Motor Exhaust Imperils Health.—The question of the amount of carbon monoxid gas in the air due to the large number of motor vehicles in the city was submitted to the public health committee of the New York Academy of Medicine, which has submitted a preliminary report. The report states that at certain periods of the day and in certain areas of the city the concentration of carbon monoxid gas is such as to call for remedial measures. While all the data have not been made public, they are said not to be startling, yet serious enough to warrant continuing the investigation.

Hospital News.—Flooding of the excavation for the new Reconstruction Hospital at One Hundredth Street and Central Park West, through bursting of a six-foot sewer, March 16, caused alarm lest the north wall of the present hospital building be undermined. As a precautionary measure, the patients were transferred to other hospitals.——Members of the board of directors of the Manhattan Eye, Ear and Throat Hospital celebrated the fifty-fourth anniversary of the founding of the institution at the Hotel Astor, March 15, and launched a $300,000 campaign for funds with which to provide additional quarters. The plan is to add three stories to the present six-story building, which will provide a total of 165 beds in wards.

NORTH CAROLINA

Physician Honored.—At a meeting of the Mecklenburg Medical Society at Charlotte, March 6, Dr. Isaac W. Faison, former president of the state medical society, was presented with a gold watch in honor of his seventieth birthday, and his forty-seventh year of practice in North Carolina.

State Board of Health News.—Dr. James S. Mitchener, Raleigh, has been appointed director of the division of medical inspection of schools to succeed Dr. George M. Cooper, who has been appointed assistant secretary of the state board of health, a position which has been vacant for several years. Dr. Mitchener formerly served as epidemiologist of the board. ——Dr. Knox E. Miller of the U. S. Public Health Service, for several years assigned to the State Board of Health of North Carolina as director of county health work, has been assigned to Louisiana for similar duties. He is succeeded in Raleigh by Dr. Everett F. Long.

John McTyeire Flowers Lectures.—Dr. W. W. Keen, emeritus professor of surgery at the Jefferson Medical College of Philadelphia, will give the John McTyeire Flowers lectures at Trinity College, Durham, April 10, 11 and 12, in the Craven Memorial Hall. Dr. Keen will lecture on "The Value of Medical Research to Mankind and to Animals, Especially as Illustrated by the Achievements of Louis Pasteur," "Victory over Various Diseases," and "The Duty of the Citizens of the Community to Promote and Support Medical Research." Dr. Keen will also address the alumni of Jefferson Medical College, April 12. All Jefferson alumni who can be present are requested to notify Dr. Joseph A. Speed, Durham.

OHIO

Medal Awarded.—Dr. Harold J. Gordon, Akron, has been awarded the distinguished service medal. Dr. Gordon held the rank of major in the Medical Corps and participated in the engagements in the Argonne and at St. Mihiel.

Chiropractor Fined.—Reports state that Edward Schuette of Cincinnati was fined $25 and costs, March 15, by Judge Bell, for practicing medicine without a license. Schuette will appeal. Trials of twelve other chiropractors opened March 19.

OKLAHOMA

Health Bulletin Reissued.—The *Oklahoma Health Champion*, the official monthly publication of the Oklahoma Public Health Association, which suspended publication due to lack of funds, has been revived with the March issue.

OREGON

University News.—A bill was recently passed by the legislature and signed by the governor, appropriating $200,000 for the next two years for maintenance of the University of Oregon Medical School, Portland. The school has at present an enrolment of about 200 students.

PENNSYLVANIA

Personal.—Dr. Salvatore Lojacono, superintendent of the Grandview Sanatorium, Oil City, has resigned.——Prof. Arthur A. Hamerschlag, president of the Carnegie Institution of Technology, Pittsburgh, has been elected president of the Carnegie Research Corporation of New York City.

A Municipal Mental Clinic.—A municipal mental health clinic has been opened in Pittsburgh, under the auspices of the department of charities, at the City-County Building. This clinic accepts persons with mental disorders regardless of their ability to pay for treatment, and will assist the courts and welfare organizations by examining drug addicts, alcoholics, and juvenile delinquents. The clinic has four psychiatrists and two psychiatric social workers. Dr. E. E. Mayer is director.

University News.—A statement of the financial needs of the University of Pennsylvania, Philadelphia, has been sent

to Governor Pinchot by Dr. J. H. Penniman, provost of the university. The statement was prepared in accordance with the governor's request for data to present to the state council on education, which is to recommend a policy toward higher education. At least $1,500,000 is needed from the state if a deficit is to be avoided in the next two years. Last year, the difference between the amount paid by students and that expended by the university for education was $814,250.

Physicians Oppose Vaccination Bill.—At a hearing on the Lauver bill, before the house committee on public health and sanitation, March 20, the medical profession of Pennsylvania was well represented. This bill would make vaccination optional and repeal the present compulsory law. The physicians strenuously opposed the bill. The proponents of the measure were principally nonmedical men, who presented well known antivaccination propaganda. Drs. C. Lincoln Furbush, G. W. McCoy, A. A. Cairns, W. F. Donaldson, Walter Cornell, H. C. Frontz and George A. Knowles were among the physicians present at the hearing.

Philadelphia

An All-Philadelphia Conference.—All phases of charitable, civic and social work in Philadelphia are to be represented in a conference of more than 300 agencies, April 18-21, which will be known as the All-Philadelphia Conference on Social Work. The main sessions will be held in the auditorium of the Academy of Natural Sciences.

Germantown Hospital to Rebuild.—The older buildings of the Germantown Dispensary and Hospital, at Penn and Chew streets, will be replaced by modern fireproof structures at a cost of $1,000,000, it was announced, March 15, by Francis R. Strawbridge, president of the hospital. A campaign to raise the necessary money will be started next month.

Cornerstone for Samaritan Hospital Laid.—Ground for the new building for the Samaritan Hospital was broken, March 21, with appropriate exercises. This building will be erected in front of the middle wing of the present hospital at Broad and Ontario streets. Gifts to the building fund of $20,000 by the Edward G. Budd Manufacturing Company, and $5,000 by the Freihofer Baking Company, were announced following the ceremonies.

Surgeons Attack Anatomic Bill.—The future of Philadelphia as a center of medical learning is declared by leading surgeons and teachers of anatomy throughout the state to be tied up in a bill recently introduced into the state legislature by Representative Golder. The measure is bitterly opposed by physicians and surgeons and, March 20, a group of surgeons went to Harrisburg to fight it in committee. The act is designed to take from the state anatomic board nearly all the authority it had over the disposition of the bodies of paupers and unidentified persons, it is alleged. The executive committee of the state anatomic board, which will fight the measure, includes Dr. J. Parsons Schaeffer, president of the board; Dr. Hewson, secretary, and Dr. Henry Morris, treasurer.

TEXAS

State Health Week.—Governor Neff has designated April 2 as the date for the opening of a state-wide health promotion campaign, to be conducted by the state board of health.

UTAH

Chiropractic Bill Passed.—An examining board of five chiropractors will be selected and recommended to the state department of registration, in compliance with the new law. Under the law, recently enacted, chiropractors will be licensed to treat disease as other practitioners are, and will be amenable to the state and city laws regarding contagious diseases and the signing of death certificates.

WASHINGTON

Typhoid Survey.—The Washington State Board of Health has asked the legislature to appropriate $8,000 for a survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever and enterocolitis.

Personal.—Dr. Herbert L. Moon, Seattle, suffered a fracture of three ribs in an automobile collision, March 8.——Dr. Park W. Willis, Seattle, has been appointed a member of the state board of medical examiners to succeed Dr. Charles C. Tiffin.

Graduate Medical Lectures.—The University Extension Graduate Medical Lectures at the University of Washington Medical Department, Seattle, will be given in July. There will be four regular courses this year, consisting of twenty lectures altogether. Drs. Finney, Stengel, Ormsby and Rosenow will be the lecturers.

WEST VIRGINIA

Personal.—Dr. John H. Bird, Rock, has been elected president of the Mercer County Medical Society.——Dr. Fred O. Marcum, who has been ill for the past two years, has returned to Ceredo to resume practice.——Drs. Page Dameron Barlow and Robert A. Ashworth have been elected president and secretary, respectively, of the Marshall County Medical Society.——Prof. A. P. Mathews, of the University of Cincinnati, lectured at the School of Medicine of West Virginia, Morgantown, on "The Origin of Organic Matter," March 15.

Society News.—The annual meeting of the West Virginia State Medical Association will be held at Beckley, June 12-14. Instead of the usual banquet, an old fashioned barbecue will be held at the Raleigh Country Club, June 13.——Resolutions were passed at the Mingo County Medical Society opposing the creation of a special board of chiropractic examiners for West Virginia. It is now illegal for chiropractors to practice in the state, and owing to the diligence of the county society no chiropractors are located in Mingo County, it is stated.

WISCONSIN

Health Show.—A health show will be held in Milwaukee, April 21-28, under the auspices of the state board of health. The profits will be used to promote child welfare in the city.

CANADA

Drugless Healer Fined.—It is reported that J. J. O'Malley, a drugless healer of Calgary, was fined $50 and costs for practicing medicine without a license, March 4. O'Malley was arrested following the death of Mrs. Elizabeth Parker as a result of diphtheria. O'Malley treated her for the disease, it was stated, by making her wear spectacles containing strong lenses.

Hospital Superintendents Appointed.—Dr. Edward M. Pearse has been appointed general superintendent of the Provincial Royal Jubilee Hospital, Victoria, B. C., to succeed Dr. Edward S. Hasell, who resigned because of ill health, following twenty years' of service.——Dr. Clarence B. Farrar, Ottawa, has been appointed superintendent of the Homewood Sanatorium, Guelph, Ont., to succeed Dr. Alfred T. Hobbs, who resigned recently.

McGill University News.—An endowment of $25,000 for the departmental library of chemistry at McGill University, Montreal, by John Baillie, was recently announced. The endowment will be a memorial to the donor's son, Lieut. George Irving Baillie, who was killed during the World War.——A series of luncheon lectures on industrial medicine was recently arranged by the governors of McGill University, in order to bring before the manufacturing and industrial sections of the community the importance of preventive and sanitary medicine in industry. Dr. B. L. Wyatt, Laurentide Health Service, spoke on "Industrial Medicine"; Dr. Haven Emerson, Columbia University, New York, on "Periodic Health Examination in Industry"; Prof. George C. Whipple, Harvard University, Boston, on "Industrial Sanitation"; Dr. Linsly R. Williams, National Tuberculosis Association, on "Industrial Health from the Standpoint of Tuberculosis," and Dr. Wilbur A. Sawyer, Eastman Kodak Company, New York, on "The Physician in Industry."

GENERAL

Dr. Victor C. Vaughan Receives Medal.—The French government presented the medal of the Legion of Honor to Dr. Victor C. Vaughan, March 28, for meritorious service in science and in the World War. The decoration was presented at the Chicago Club by Mr. Barthelemy, the consul, in the presence of a few medical friends.

Child Health Test to Be in South.—The American Child Health Association, which recently selected Fargo, N. D., for its child health demonstration, announced, March 11, that the second of the three experiments will be carried out in some community south of the Mason and Dixon line and east of the Mississippi River. A rural county of not more than 30,000 population and containing no town of more than 5,000

inhabitants, will be selected. The demonstration will continue five years.

National Clean-Up and Paint-Up Campaigns.—Under the auspices of the Bureau for Better Home Towns, St. Louis, clean-up and paint-up campaigns have been carried out in 7,000 cities in the United States in the last ten years. The *Spotless Town News*, issued by the bureau, gives methods for conducting these campaigns, and illustrates the benefits derived. Trophies in the form of solid silver cups have been presented to various cities which have been deemed "the cleanest town." Lynn, Mass., won the cup in 1922, and Boston in 1921.

Society News.—The thirty-fifth annual meeting of the American Pediatric Society will be held at French Lick Springs, Ind., May 31-June 2, under the presidency of Dr. L. Emmett Holt. This will be the occasion of the first annual golf tournament of the society.——The nineteenth annual meeting of the National Tuberculosis Association will be held at Santa Barbara, Calif., June 20-23.——The annual meeting of the American Bronchoscopic Society will he held in Atlantic City, N. J., May 9, the day preceding the meetings of the American Laryngological, Rhinological and Otological Society.——The sixty-eighth semiannual meeting of the Southern California Medical Society will be held at Long Beach, Calif., April 6-7.

The Prevention of Juvenile Delinquency.—Through a special gift of the Commonwealth Fund, the National Committee for Mental Hygiene has been able to create a division on the prevention of delinquency. The work of this division falls into two groups: (1) department of psychiatric field service and demonstration clinics, and (2) department of experimentation. The first department provides two traveling clinics to juvenile courts and other interested agencies throughout the country, to demonstrate the value of psychiatric work in the prevention of delinquency and conduct disorders of childhood. These clinics will remain from six to twelve months in each community chosen. It is planned, during a five-year demonstration, to select at least eight centers where it will be possible to organize the social forces of the community most effectively, to deal with the problem of juvenile delinquency. The first traveling clinic completed its demonstration in St. Louis, December, 1922. Every child coming before the juvenile court received a preliminary physical, mental, and social survey. Following this, a careful summary of all the findings, an estimate of the essential causative factors involved in the child's behavior and recommendations for treatment were made, along medical, psychiatric, educational and social lines. This clinic was transferred to Norfolk, Va., in December, at the request of the judge of the juvenile court and the city council, and will remain until June. Following the visits of the traveling clinic, the director of the division keeps in touch with the work and organizes groups of those persons who had been under training during the demonstration period, to carry on the work until the city takes over the entire support of the undertaking.

FOREIGN

Child Labor in Japan.—Japan has adopted the Convention of the International Labor Organization of the League of Nations prohibiting generally the employment in industry of children under 14 years of age. This step involves the repeal of the present Japanese law that admits children under the age of 12 to certain light industrial employment.

Medical School at Batavia, Java.—According to an announcement received from the Government Medical School at Weltevreden (Batavia), Java, this institution is conducted to train the natives of Java to practice medicine among their own people. The course extends over seven years, the first two of which are largely devoted to premedical subjects including English, Dutch, and the native languages and literature, botany, zoology and other subjects. During 1922 there was an enrolment of 131 students.

Medical Education in Jugoslavia.—A schedule of minimum requirements for the regulation of medical colleges has been issued by the board of health of Jugoslavia, in which a certificate of moral character, and evidence of preliminary education (high school) are requirements for admission to lecture courses. The curriculums of the medical schools are to embrace four years of instruction and one year's internship in a hospital, aggregating at least fifty months. Subjects to be included in the course of instruction must comprise anatomy; physiology; chemistry; physics; materia medica and therapeutics; theory and practice of medicine, including ophthalmology; otology, dermatology and neurology; pathology and bacteriology; surgery, including orthopedic surgery; obstetrics and gynecology; hygiene and medical jurisprudence.

Foreign Congress.—The Ligue Française d'Hygiène Mentale, the Ligue Belge d'Hygiène Mentale and the U. S. National Committee of Mental Hygiene will hold a congress in New York, April, 1924. Among the subjects to be discussed will be the abuse of stupefying drugs, the reorganization of teaching of backward children, reform of penal systems, psychophysiologic vocational selection and the technic of psychotherapy. Dr. Genil-Perron, Ligue d'Hygiène Mentale, 99 Avenue de la Bourdonnais, Paris, is general secretary.——The fourth annual British Congress of Obstetrics and Gynecology will be held in Edinburgh, April 19-21.——The National Council of Social Hygiene, a federation of nine private associations dealing with public health, held its sixth session in Prague, February 7. Dr. Alice G. Masaryk of Czechoslovakia was reelected chairman of the council.——A national congress for research work in tuberculosis will be held in Prague, May 19-21, under the auspices of the Czech Association for the Promotion of Research in Tuberculosis. Prof. Ivan Honl is chairman.——The Oxford Ophthalmological Congress will be held at Keble College, July 4-6. The Doyne memorial lecture will be delivered by Dr. H. M. Traquair on "The Differential Characters of Scotomata and Their Interpretation."

Personal.—The Académie de médecine at Paris recently elected Dr. Salimbéni of Acquapendente, Italy, a foreign corresponding member. He was formerly connected with the Pasteur Institute. Dr. Malvoz, professor of bacteriology at the University of Liége, was elected at the same time.—— Dr. John Weir has been appointed a physician to the Prince of Wales. This is the first official recognition of a homeopathist on the part of a member of the royal household.—— Major Gen. Sir William B. Leishman, director of pathology at the War Office, London, has been appointed to succeed Sir John Goodwin as director general of the Army Medical Service.——The Prix de Carthage, a biennial prize founded in 1921 for scientific or historical work, has been awarded to Dr. Nicolle of the Pasteur Institute of Tunis, for his investigations of typhus fever, kala-azar, trachoma and Malta fever. ——Sir T. W. Edgeworth David has resigned as president of the Australian National Research Council on account of ill health. Orme Masson, professor of chemistry in the University of Melbourne, has been appointed his successor in this position.——*Science* relates that a grant of $100 has been made from the E. Thompson Science Fund to Professor Wiedemann of Erlangen, in order that he may continue his research on the physical properties of colloidal substances. A grant of $150 was made to Professor Lipschütz of Vienna, for further research on mouse tar cancers.——Prof. P. Flechsig of Leipzig has been elected an honorary member of the Swedish Society for the Advancement of Science.—— Dr. J. L. Yagüe of Madrid has been awarded the Roel prize of 3,000 pesetas by the Instituto Medico of Valencia for his work "Extragastric Purgative Medication."

Deaths in Other Countries

Dr. **Ian D. C. Howden,** surgeon and radiologist to the Royal Victoria Hospital, Dover.——Dr. **Peter C. Smith,** for twenty-two years medical officer of health for Wandsworth, London, and one time editor of the *Sanitary Journal;* aged 65, of cerebral hemorrhage.——Dr. **Lucius Spengler** of Davos-Platz, noted for his operative work in tuberculosis.——Dr. **Diógenes Vargas** of Mendoza, president of the public health service of the province, and senator.——Dr. **Surbek,** president of the medical licensing board in Switzerland.——Dr. **E. Lejeune** of Brussels, formerly inspector general of the army medical department, aged 82.

CORRECTIONS

Leprosy in New York.—In THE JOURNAL, March 17, mention is made of a case of leprosy at Bellevue, and it is stated that "this is the only case of leprosy in New York City as far as known." Dr. Howard Fox points out that approximately fifty lepers are to be found in New York City at any time.

Tuberculosis Instructors Erroneously Reported.—The Assistant Director of the U. S. Veterans' Bureau writes that the following names were erroneously included in the list of instructors from Yale University who will teach in the Veterans' Bureau schools for instruction in pulmonary tuberculosis (THE JOURNAL, March 24, p. 860): Drs. J. S. Ely, E. K. Hunt and A. M. R. Lauder.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 5, 1923.

Science in the Army

Sir William Leishman, F.R.S., has been appointed director general of the army medical service. The appointment marks a new departure in the service, for previously the position was given to men who had distinguished themselves as administrators, never to a scientist. Sir William Leishman entered the army medical department in 1887, and became major in 1905, colonel in 1915, and major-general in 1918. He has done a considerable amount of research in bacteriology, and is known all over the world for his discovery of the parasite of kala-azar, which he observed in films taken from the spleen of a soldier who had died from the disease in 1900; but he did not publish a description of it until 1903, when the same observation was independently made by Lieutenant-Colonel Donovan of the Indian medical service, who found the organism by splenic puncture during life. In 1903, he became assistant professor of pathology at the Army Medical School, and in 1910 professor. When the war broke out he was sent to France as adviser in pathology, and when he returned to England in 1918 he was appointed director of pathology at the war office. He has also done valuable work on tick fever, and has devised a method of chromatin staining which is used in laboratories all over the world.

Physician Sued for Negligence in Setting a Fracture

A case of considerable medical importance has been heard at the Somerset assizes. A woman claimed damages against a physician, alleging negligence in treating a fractured forearm, as he failed to set the bones in apposition, set them out of alinement, and did not take reasonable care to see that they were set so as to unite. In consequence, there was displacement of the lower fragments, and the bones failed to join properly. An operation in which the bones had to be sawed through and reset with plates and screws became necessary. It was also complained that he did not make a roentgen-ray examination. The accident occurred, June 9, 1921, and both bones of the forearm were fractured. The defendant was sent for and first applied a temporary splint. He removed the plaintiff to his office, where he set the arm. At the end of the sixth week, when the splints were taken off, the bones had not united. The patient then consulted a surgeon, who performed the operation described. The result was a fair arm, but she could not do hard work. The surgeon who performed the operation stated in evidence that he took a roentgenogram which showed the bones overlapping at the fracture. Judging from what he found, proper treatment had not been afforded to the arm. It was a difficult fracture to set, and in his opinion nothing could have been more helpful than a roentgenogram to see that the setting was satisfactory; he regarded that as a routine practice nowadays. When the arm did not mend, he thought that it amounted to a lack of reasonable care not to have taken a roentgenogram. He did not agree that the plaintiff was a poor bone-forming subject. Another surgeon gave evidence confirming the operator. The physician described his treatment, and said that he did not consider a roentgen-ray examination necessary. July 22, he found that there was nonunion. The girl was in a bad state of health, and he prescribed a tonic to improve her general health and bone-making capacity. August 19, he again removed the splints, and the bones seemed to be united. He instructed the patient to keep the arm in a sling and have massage performed. August 27, the arm was in good condition, but on September 9 he found a good deal of swelling around the seat of fracture, which suggested to him that there had been some violence. He then found that the bones were not in alinement, and he reapplied the splint after placing them in alinement. Another physician gave evidence that he examined the arm, September 19, in consultation with the patient's physician, and found it perfectly straight, but there was no union. He considered that the treatment had been correct, but suggested that the bones should be rubbed together to encourage union. A nurse who performed the massage also gave evidence that at first she found nothing abnormal, and that afterward deformity and swelling appeared. Mr. T. H. Openshaw, consulting surgeon to the London Hospital, stated that it was not usual to take a roentgenogram of a limb in a case of ordinary simple fracture of this nature. One could get the bones into perfect alinement without the roentgen rays. The advice as to massage was perfectly correct. He saw no reason why the two physicians in consultation could not find by manipulation whether the bones were straight. If the patient had been operated on immediately, she might not have had as good an arm as she had. His theory was that she was a poor bone maker. In cross-examination he was asked by the plaintiff's lawyer: "Do you say that an x-ray examination was not necessary"? He answered "Yes. It would have prevented this case being brought. You would not have a leg to stand on if there had been an x-ray examination." Mr. Richard Warren, formerly surgeon to the London Hospital, and examiner in surgery at the Universities of Oxford and Cambridge, stated that, having heard the physician's evidence, he could not criticize the physician's treatment in any way. The judge told the jury that the patient of an ordinary physician was entitled to expect fair skill, but not such as from a specialist. If a physician made a mistake and it was not due to want of reasonable skill and care, that was a misfortune. One could not expect infallibility in physicians more than in other professional men. It was for the jury to say whether the physician had been guilty of negligence. If it found for the plaintiff, it was a case for moderate damages. The jury returned a verdict for the defendant. The case once again emphasizes the fact that if physicians would avoid litigation in fracture cases they should, except in the most simple, have roentgenograms taken.

A Condemnation of Spiritualism

In a lecture on "The Forces Behind Spiritism" before the Victoria Institute, Dr. A. T. Schofield, a writer on psychotherapy, strongly condemned occult practices. Being a denial of Christ, he urged that these forces must be of evil origin and their influence diabolical. Spiritism was not all fraud, for marvelous phenomena were produced. The evidence was too strong for denial that in certain instances heavy furniture was moved. There was the testimony of several well known persons that they saw the famous medium, D. D. Home, float out of a window 85 feet above the ground, travel 7½ feet to the next window, and there glide in feet foremost. The chief force in spiritualistic manifestations was that of evil spirits, ever seeking to possess the medium or inquirer, and many sorrowing war mothers had been deceived by them. The second force was also nonhuman, but it was less terrible, being merely freakish and useless, and was often imitated fraudulently in conjuring. This category included levitation and such performances as the floating of Home, luminous appearances and automatic writing. We could only fall back on Maeterlinck's suggestion that old demons loved to fool those who sought the secrets of the other world. The third force was not superhuman, but consisted of occult powers that human beings mostly possessed. They were connected with the unconscious mind and thought transference, which accounted for most supposed messages from the dead. The

seeker was convinced by the truth of the information about the departed perhaps known only to him or her, but these details, presumed to come from the spirit world, in reality came from the seeker's brain, which the medium unconsciously read. Sometimes, however, this process might be combined with communications from evil spirits. Spiritualism was a hoary evil, condemned in the scriptures, and "Harley Street" was making a good harvest out of its injurious influence.

The Fellowship of the Royal Society

The highest scientific distinction in this country is the Fellowship of the Royal Society (F.R.S.), which is granted only for eminence in original research. The council has recommended fifteen persons for election to the society. Those that are members of the medical profession are Dr. E. D. Adrian, university lecturer in physiology, Cambridge; Dr. E. Fawcett, professor of anatomy in the University of Bristol; Dr. R. T. Leiper, professor of helminthology in the University of London, and Dr. J. J. R. Macleod, professor of physiology in the University of Toronto.

Investigations in Animals on Vitamin and Mineral Deficiencies

The Rowett Institute was founded near Aberdeen to explore the wide field of animal nutrition. Its work was begun in 1914, interrupted by the war, and resumed on full scale in 1920. This consists generally of feeding experiments on farm animals. So far, the results seem to show that too much reliance has been placed on feeding experiments made on rats and guinea-pigs, and that conclusions drawn from them do not necessarily apply to other and larger animals. A litter of pigs was divided into three groups and fed on a basic ration boiled and stirred for an hour (which destroys vitamin C and seriously affects vitamin A). One group had the three vitamins added in the form of fresh-cut grasses and clover; the second had A in the form of cod liver oil, and C in the form of fresh-grated swede; the third had no addition of vitamins, but was given a practically vitamin-free extra ration to make up for the energy value in the extra rations of the others. All three had access to a box containing mineral matter according to an analysis of the ash of sow's milk. All three did equally well. In a similar experiment, pigs, given an abundant supply of minerals, were fed on a diet so free from vitamin C that guinea-pigs fed on it developed scurvy in the third week; they flourished. Experiments were made on pigs with a basic diet as free as possible from vitamin A, but with mineral deficiency. To one group, cod liver oil, which contains A in abundance, was added; to the other, linseed oil, which is deficient in A. The interesting result followed that cod liver oil had a definite beneficial effect on health and the rate of growth, but the effect was greatest when the diet was ill balanced or defective in its mineral constituents. Moreover, the beneficial effect was greater in the sheep than in pigs. In young pigs a condition closely resembling rickets in children was brought about by deficiency in minerals.

On a ration consisting only of grains which contain an excess of magnesium, potassium and phosphorus, and a deficiency of calcium and sodium, a condition indistinguishable from that of rickets in children, quickly arose. The addition of cod liver oil to the diet improved the general health, but did not prevent the disease. But adjustment of the mineral contents of the diet enabled the animals to grow from weaning to sexual maturity without any signs of rickets. Thus, in pigs the chief factor in the production of rickets is the lack of mineral matter in the food. The beneficial influence of vitamin A and sunlight is most marked when the mineral balance is defective. The conclusion is drawn that there is little warrant for paying the heavy prices of food stuffs rich in vitamins for farm animals.

PARIS

(From Our Regular Correspondent)

March 2, 1923.

The Inadequacy of the Sanitary Passport

According to the regulations in force at present, any person entering France from a country known to be contaminated by any of the so-called pestilential diseases (plague, cholera, yellow fever, typhus) must be provided with a "sanitary passport." From the moment the person in question is given this document, he becomes subject to sanitary surveillance, which does not cease until the time, as indicated on the passport, has elapsed within which incubation of the disease to which he has been exposed, and of which he may have brought the germ to France, might occur. In reality, however, this is the way the thing works out: At the frontier or at the port of disembarkation, the traveler is asked to state the name of the place to which he is going, and, if possible, to give also his future address. The public health officer, after filling out a double blank form, gives one sheet to the traveler, and mails the other to the mayor of the commune in question. The sheet that the traveler receives constitutes his sanitary passport, which the bearer must present or have presented to the mayor of the commune, within twenty-four hours after his arrival. The second sheet is called the "sanitary advice." It gives to the local public health authorities the name and address of the traveler, the region from which he has come, and the reasons for, and the duration of, the surveillance to which he must be subjected. The purpose of these formalities is to put the municipal authorities in a position to exercise toward this class of travelers a special sanitary surveillance, which shall consist in assuring themselves that, within the time specified, they do not contract any suspected affection, or, if they do, that all the necessary measures as regards isolation and prophylaxis are instituted. However, experience has shown that, in the majority of cases, the traveler gives a false address to avoid being discommoded, with the result that in that case no control can be exercised.

In order to remedy this deplorable state of affairs, Drs. P. Vigne and R. Crémieu (Lyons) propose that every traveler holding a sanitary passport be required to leave a cash deposit at the point of entry, the amount to be determined by the financial condition of the traveler and the exigencies of the case. This sum would be returned by the municipal authorities or the public health office of the locality to which the traveler was proceeding, on presentation of the receipt given at the point of entry. In order to recover their deposits, travelers would thus be compelled to present themselves to the authorities responsible for the sanitary surveillance.

The Abuse of Intravenous Injections

In the third volume of his Année Thérapeutique, which has just appeared (Paris, 1923, Masson et Cie, publishers), Dr. L. Cheinisse protests against the present exaggerated use of intravenous injections. This abuse, he says, seems to be based partly on the false idea that the intravenous route is always preferable to the hypodermic method, and partly on the belief in the absolute harmlessness of intravenous injections. As for the supposed superiority of the intravenous method, the fact is often lost sight of that, while it is true that injections by the vein carry the drug immediately to the blood stream, it is no less true that the drug disappears just as quickly, which is not an indifferent matter in the case of numerous medicaments. For instance, if an intravenous injection of antidiphtheric serum is given, which is indicated only in hypertoxic diphtheria, it must be followed immediately by an intramuscular or subcutaneous injection, by reason of

the rapidity with which the antitoxin introduced by the vein is eliminated. It cannot, therefore, be upheld that intravenous injections are always more efficacious than subcutaneous injections. With respect to the harmlessness of intravenous injections, it may be stated that, unfortunately, the dangers associated with injections by the vein are greater than is commonly supposed. Péry recently reported to the Société d'obstétrique et de gynécologie of Bordeaux serious complications following an intravenous injection of hexamethylenamin (hematuria, epistaxis, and pulmonary congestion with hemoptysis). Then, again, certain substances employed in intravenous injections, such as sodium carbonate and calcium chlorid, are particularly irritating to the perivascular tissues; one should, therefore, take great care in giving intravenous injections to avoid allowing the injected drug to penetrate the subcutaneous cellular tissue. Other substances, such as iodin-iodid solutions, which have been recommended of late, have the disadvantage of soon causing induration of the veins.

These facts, taken as a whole, are of a character to cause the practitioner to be on his guard against too widespread use of intravenous injections.

Examination, During Actual Flight, of Candidates for Aviation

The organism of the aviator must rapidly adapt itself to abnormal and ever changing conditions of existence. Aviation demands functional suppleness, as it were, and the estimation of such suppleness furnishes one of the best criteria of the physical aptitude of a candidate for aviation. It is important, therefore, to be able not only to evaluate certain physiologic functions of the aviator but also to study these functions under conditions as much like those encountered in actual flight in an aeroplane as possible. The aviator during flight is subjected to various abnormal influences, among which may be mentioned as exceedingly important the diminution of atmospheric pressure, and its corollary, the diminution of the partial tension of oxygen. Experimentation on mountains, in balloons, and in caissons containing air under pressure, has brought out many important physiologic facts. The use of caissons is especially valuable in securing experimental data of a delicate nature. But depression and diminution of partial tension of oxygen are not the only factors affecting the flight of the aviator, and it has proved interesting and instructive to carry out during flight certain researches on the variations of arterial pressure, the maximal vital capacity and the variations of the blood urea. Dr. Beyne, a member of the army medical corps, presented lately an interesting communication on this subject to the Société de médecine militaire française.

The performance of experiments, even though very simple, on board ordinary aeroplanes is both difficult and troublesome. The instability of the instruments, the vibrations of the motor, the cold, the abominable ventilation, and the lack of space, disturb, to a considerable extent, both examinee and examiner. Beyne has been able to secure more favorable conditions of experimentation by utilizing a closed aeroplane of the sanitary service, which has a cabin sufficiently large to convert into a miniature laboratory, perfectly sheltered from the wind, well lighted, and where, if necessary, an electric heater can protect the occupants and the instruments from the cold. Beyne has been able, in this aeroplane, to record arterial pressure curves, cardiographic and sphygmographic tracings, and tracings showing the vital capacity, and all this at various altitudes, up to 4,200 meters. This new use of the aeroplane will render good service in certain researches, and will allow the examining physician to secure better data on the influence of certain factors on the organism of the aviator, during actual flight, than he would be able to obtain if he waited on the ground below, until the aviator landed.

New Doctors "Honoris Causa" of the University of Paris

The council of the University of Paris, on recommendation of the faculties concerned, decided at its last session to confer the degree of doctor honoris causa on a number of men of science in other countries. The Faculté de médecine will so honor Dr. Keen, formerly professor of surgery in Jefferson Medical College, Philadelphia, and Dr. Golgi, professor of histology at the University of Pavia, Italy. The diplomas and the corresponding insignia will be bestowed on the men thus distinguished during the ceremonies connected with the reopening of the university next fall, which will be held, Nov. 24, 1923.

PEKING, CHINA

(From Our Regular Correspondent)

Feb. 1, 1923.

Shanghai Medical Congress

In Shanghai, during the week of February 14-21, a congress of medical men from all over China will be held under the auspices of the China Medical Missionary Association. In the morning and evening sessions, addresses of a general medical nature will be delivered. In the afternoon there will be sectional meetings. The program includes addresses under "General Medicine" on diabetes, epidemic (lethargic) encephalitis in China, syphilis, radium, kala-azar in China, growth and development of Chinese children, carbon tetrachlorid as an anthelmintic in uncinariasis, physical examination of medical students, malaria, vital capacity studies and leprosy. Under "Surgery" are included papers on skin grafts, ruptured spleen, bone surgery, tuberculosis of the knee, fistula in ano, pathologic changes in the scrotal contents, lymphosarcoma and ankylosis. Other sections are clinical physiology, pharmacology, obstetrics and gynecology, ophthalmology, ear, nose and throat, roentgenology, parasitology and hygiene and public health.

In the special morning sessions the following subjects will be discussed: "Medical Mission Policy," Dr. Henry Fowler; "Medical Evangelism," Dr. F. M. Auld, Dr. H. F. Love and others; "Medical Ethics," Dr. Merrins and others; "Government Public Health in China," Surg.-Gen. S. H. Chuan; "The Problem of the Future of the Council on Health Education," Dr. W. W. Peter; "The Problem of the Future of the National Health Association of China," Dr. S. M. Woo; "Hospital Administration," Dr. J. H. Snoke; "Training of Hospital Technicians," Dr. j. A. Snell. In the general evening sessions, papers will be read on "The Activated Sludge Process of Sewage Disposal in Shanghai," Charles Harper; "What Public Health Activities Are Possible of Immediate Initiation in China?" Dr. Wu Lien Teh; "Report of the Work of Central Epidemics Prevention Bureau in Peking," Dr. Edgar Tsen; "Public Health Activities in Nanking," Dr. C. W. Woodworth; "Pasteur," Dr. C. Noel Davis; "Lister," Dr. E. G. Gauntlett; "Nursing," Miss Cora E. Simpson, executive secretary, Nurses' Association of China; "Medical Education," Dr. H. S. Houghton and Dr. Harold Balme; "Public Health," Dr. W. W. Peter.

A Consolidation of Medical Schools

From the standpoint of medical education in China, an important consolidation has taken place in the absorption of the North China Union Medical College for Women in Peking by the School of Medicine of the Shantung Christian University at Tsinanfu. The former institution was established about twenty-five years ago as a part of the plan of the North China Educational Union, composed of four missionary

bodies. The cost of its establishment and maintenance was borne by the Board of Foreign Missions of the Methodist Episcopal Church in America. The original investment for buildings and equipment was $100,000 gold. The budget for the past year was $75,000 gold. During the past year it has had twenty-four students in the medical school, and forty students in the school of nursing. This board has also supplied the largest part of the teaching staff, although some of the teachers were supported by other missionary bodies. The teaching staff has consisted of ten full-time and several part-time instructors.

Prior to the establishment of the new Peking Union Medical College by the China Medical Board of the Rockefeller Foundation in 1919, it was the only organized medical school in North China giving medical education to women. In that capacity it served a useful purpose, even though its equipment was limited.

With the resources and equipment of the new medical college in Peking made available for women, the possibility of funding the resources of the North China Union Medical College for Women with the medical school at Tsinanfu was proposed. The School of Medicine of the Shantung Christian University is the best of the mandarin-speaking and mandarin-teaching medical schools in China. It is supported by a union of missionary bodies, but up to this time the Methodist board has not had a large share in the work. The present transfer will bring the resources of the Methodist board into the union in Shantung, and will result in a great improvement in the facilities for both men and women students, and an increase in the professional staff. Women will enter as first year students with the men in the fall of this year. The rest of the school will be transferred in January, 1924,

BELGIUM

(From Our Regular Correspondent)

Feb. 8, 1923.

Rinderpest, or Cattle Plague

M. Leynen, inspector of the veterinary service, has just published a report on the incidence of the rinderpest in Belgium during 1920. Since 1865, the rinderpest had not appeared in our country. An investigation was therefore instituted by the department of agriculture to discover the origin of the present epizootic, and it was found that the plague had been introduced into the quarantine stables of the port of Antwerp by zebus brought from India. These animals were much more resistant to the plague than our indigenous cattle, and the mortality in this herd was not very high, so that the presence of the plague was not suspected. The appearance of the rinderpest in Belgium, and likewise of dourine at the present time, shows that diseases that we scarcely anticipate may be introduced within our borders. Hence the necessity arises of having a veterinary service ever on the alert and ready to institute an energetic campaign against epizootics. Such a service is of prime importance not only to safeguard the particular interests of each country but also to protect Europe as a whole. It is quite probable that if a vigorous campaign had not been waged against this epizootic in our country, it would soon have assumed threatening aspects for the neighboring countries. The results secured in Belgium in the fight against the rinderpest prove that in any country in which this disease has been accidentally introduced it should be completely eradicated by the formulation and strict enforcement of sanitary rules.

The Belgian Bureau of Eugenics

The Belgian Bureau of Eugenics was created through the generosity of M. Armand Solvay, and is located in the Solvay Institute of Sociology at Brussels. The inauguration of the bureau was celebrated, a few days ago, in the presence of several departmental ministers. This bureau will occupy itself, from the beginning of its activities, with the organization of research services that will be capable of rendering valuable aid to societies that are dealing with problems of social hygiene.

Workers will be trained in the redaction of geneological tables, in their schematization according to pedigree, and in the analysis of the personality of people with whom they have dealings, in order that the nature of such persons may be understood better. The investigator in eugenics must not neglect any source of information, such as teachers, instructors, civil and religious authorities, schools, asylums, prisons, hospitals, charity organizations and public health organizations, in order to accumulate a mass of data with regard to the history of families that are dangerous on account of their faults or misdemeanors, or remarkable for their eminently good qualities. This information is then sent to the central office, where it is digested in accordance with a particular classification comprising such groups as families, professional groups and ethnic elements. Thus, the Belgium Bureau of Eugenics brings out the indispensable complementary need of societies of public health and welfare, for the reason that they are pursuing similar ends: an amelioration of the conditions under which new life is generated, and an improvement of the conditions under which lives are lived. It is in these two different domains that the Belgian Bureau of Eugenics will pursue its practical studies, aside from its scientific researches.

A Course in Hydrology and Climatology

Until such time as regular instruction in medical hydrology can be provided in our universities, the Société belge d'hydrologie et de climatologie médicales is about to establish special courses, which will begin soon in Brussels (the definite time will be announced later). Dr. Terwagne will open the course of instruction and will give three lectures on thalassotherapy. Dr. Wybauw will give nine lectures on hydrology. Drs. Guilleaume and Schaltin will speak on hydrotherapy. A second course has been planned, for which Dr. Moreau has already been engaged.

Transmissibility of Bovine Tuberculosis

In a communication presented recently to the Société royale des sciences médicales et naturelles of Brussels, M. Hamoir took up the controversial question as to whether bovine tuberculosis is transmissible to man, which was answered negatively by the "dualists" of the Koch school. As is well known, this question is one of great importance for the continental countries, in which 4 per cent. of the cattle are affected with tuberculosis. The udder is infected in 5 per cent. of the cows presenting a positive reaction, and in from 25 to 50 per cent. of the cows affected with generalized lesions. The milk preserves a normal appearance for a long time, although its acidity and its butter and lactose content are diminished. The test for *Bacillus tuberculosis* is always positive, and is observed even in cows not yet affected with tuberculous mammitis but reacting to tuberculin. Bacteriologic control of milk should therefore be demanded, since the Koch bacillus is so frequently found in milk delivered for human consumption: in Berlin in 14 per cent. of the specimens examined, in Naples in 50 per cent., and in Washington in 13 per cent. It is well known that there are numerous transitional types between the bovine bacillus and the human bacillus. The human bacillus may be transmitted to cattle by the venous, subperitoneal or subdural route. The human virus, by passage through guinea-pigs, becomes virulent for cattle. The cases of tuberculous meningitis of the bovine type

collected by Adams are frank. In cases of mesenteric and cervical adenitis in children, bacilli of the bovine type are frequently found. The writer considered, therefore, that the ingestion over a prolonged period of tuberculous raw milk constituted a real danger for the child.

Autotransfusion of Blood

Speaking before the Belgian Surgical Society, Moons of Antwerp emphasized that operative statistics might be improved by a more extended application of blood transfusion. In six cases in which either he or one of his assistants operated, recovery was much facilitated by the autotransfusion of blood that had collected in the peritoneal cavity. From 700 to 1,200 gm. of blood was recovered with a spoon and filtered through sterile gauze, 1 per cent. of sodium citrate was added, and the blood was injected into the median basilic vein. In a seventh case in which autotransfusion was employed, death resulted eighteen hours after the operation. A rapid rise of temperature had occurred, but there had been no peritoneal symptoms. Moons was in doubt whether death was due to postoperative sepsis or to the autotransfusion of blood. He thinks it is possible that the addition of sodium citrate in this case, in which the amount injected was particularly large (1,200 c.c.), may have been a factor, as recent studies in France and the United States would seem to indicate. Moons stated that in the future he will employ for transfusion nóncitrated blood, preferably from a donor, rather than resort to autotransfusion.

VIENNA

(From Our Regular Correspondent)

Feb. 25, 1923.

Weight and Size of Children of the Working Classes in Vienna

During the last four years all youths coming under the notice of the section "for the care of apprentices" of the ministry of health have been carefully weighed and measured for the purpose of obtaining data on their physical development. There is excellent opportunity for this statistical work, especially in the recreation homes, and the results obtained give a good insight into the variations and changes that are taking place in the working classes of Vienna, for these contribute almost all the inmates of these homes. Dr. Lebzelter has compared the figures for 1919 and 1921. He reports that in 1919 the number of boys in each age year between 14 and 18 was 1,316, 1,776, 812 and 189. The corresponding figures for 1921 were 1,016, 1,518, 1,373 and 681. The average heights in these groups for 1919 were 151.84, 155.34, 160.50 and 165.30 cm. For 1921 they were 154.6, 158.6, 162.62 and 163.39 cm. The average weights for 1919 were: 41, 42.66, 47.5 and 51.35 kg.; in 1921 the corresponding weights were: 44.35, 45.5, 50.0 and 52.5 kg. It is clear, therefore, that the general health of the children of the working classes in 1921 was much better than in 1919; the diminished height of the oldest group of 1921 is perhaps due to the small number examined in 1919 (184 boys as compared with 687 in 1921). The younger groups show, in each instance, more improvement than the older ones; in these the year of starvation had caused damage that was not so easily reparable. Among the boys examined, those whose parents were employed in the electric and metal industries made the best showing; these classes of laborers commanded the highest wages. There is not yet available a suitable basis for conclusions concerning the girls, as regular measurements in 1919 were not obtained. In 1921, however, investigation was conducted on the same lines as with the boys, and the following figures were obtained. The four age groups included 317, 367, 322 and 324 girls, respectively. The average heights were 153.6, 154.5, 155.5 and 155.75 cm.; the average weights, 43.9, 46.96, 48.4 and 52.1 kg. During the stay in the recreation homes, the youths have increased in weight without exception, the six weeks' stay resulting in an average gain of approximately 1.1 kg. for the boys, and 2.25 kg. for the girls. This shows that the importance of such institutions cannot be overestimated.

Reforms in Dealing with Juvenile Delinquents

In the last quarter of a century, many reforms in the methods for dealing with juvenile delinquents have been under consideration in this country, but no conclusion has been reached. The ministry of justice finally appointed a commission of legal experts—judges, lawyers and politicians—and child welfare workers to draw up regulations for the use of courts and judges. The outcome of this cooperation has just been published, and will shortly receive the sanction of the ministry as a guide for dealing with such cases. The chief underlying principle is the complete separation of male juvenile delinquents from adult criminals, both in prison and while under trial; in addition, special juvenile courts are instituted. The girls are detained either in a "juvenile" prison or in that for adults, but even there they are segregated. The psychic influence of adult criminals on young minds is most deleterious, not only with first offenders, but also with youths who have served a previous prison term; but it must be kept in mind that not too rarely the young criminal is in no way behind his older "compère" in mental depravity. The new regulations permit the judge to transfer juvenile (below 18 years) cases to the "juvenile court" now in Vienna, even when the crime was committed in a distant part of the country. Heretofore the law has required trial and imprisonment of the offender in the place where the offense was committed. The principle is also established that the punishment should act, not simply as a deterrent, but rather as a means for training a deviated mind; detention in a suitable educational institution will be frequently ordered by the judge. The increasing moral and psychic deterioration of adolescents, noted in the last dozen years, has assumed such proportions as to have become alarming. In fact, alienists and psychologists have declared that the minds of those now in the age groups from 14 to 18 are quite different from those encountered before the war; ethical considerations and self-control play but a small part in the mentality of present-day adolescents of both sexes.

Public Health Arrangements in the Frontier Districts of Austria and Czechoslovakia

By mutual consent of the governments, an understanding has been reached between Austria and Czechoslovakia concerning medical practice in the frontier districts, on these lines: Physicians, veterinary surgeons, and midwives residing in these districts will in future be allowed to practice on both sides of the frontier without obstacles from the customs, medical or public health bodies. In emergency they may administer medicines that they carry with them. They must always carry a card of identification that shows their residence in the frontier districts. The inhabitants of these districts are allowed to transport medicines, in appropriate small quantity, across the frontier, if they can satisfy the custom officials that the remedies were obtained on the prescription of a duly qualified practitioner. Simple remedies, the nature of which can be readily ascertained from the package or the label, may also be transported over the frontier without a prescription. Altogether, an amicable understanding in all points relating to public health—notification of diseases, disinfection, water supply and hygienic matters—is being sought.

BERLIN

(From Our Regular Correspondent)

Feb. 24, 1923.

Bad Health Conditions in Germany

At the session of the reichstag, held February 20, Bumm, chief of the central public health bureau, gave an exceedingly unfavorable account of prevailing health conditions among the German people, basing his statements on replies to inquiries sent out to the governments of the federated states. The mortality rate has again increased; likewise war dropsy so called, meat poisonings and suicide. Among the causes assigned for the spread of disease are the lack of housing facilities, the advance in medical fees, and the high cost of medicines.

Hygienic Illumination

According to Professor Korff-Petersen, assistant in the Berlin Hygienic Institute, a white light of 25 standard candles may be regarded as furnishing the necessary minimum of illumination for reading and writing. The demand for 10 candles, which was formerly made, was in the nature of a compromise in view of what was then attainable, and must now be considered as superseded. For certain industrial purposes, still higher illumination may be needed. Whether artificial illumination is furnishing an adequate amount of light at a given place can be easily ascertained by means of a modern photometer. It is, however, more difficult to determine the quality of natural illumination by sunlight; for a photometric apparatus gives only the momentary values, whereas the degree of natural illumination varies widely from moment to moment. In judging of the illumination of a given place, it does not suffice to determine whether or not type of a certain size can be read at that point. We must consider factors that are independent of the changing illumination from the sun; therefore, for purposes of investigation, the total expanse of the apparent heavens or celestial horizon has been reduced to an area, measured in quadratic degrees, that would furnish the same amount of light by direct incidence. For the illumination of a place to be regarded as adequate for reading and writing, it must receive an amount of light equivalent to that of a *"Raumwinkel"* (space) comprising 50 reduced quadratic degrees. In such places one can expect, under normal conditions, an illumination of 10 standard candles, even though the sky may not be very clear. But the requirement of a space equivalent to 50 reduced quadratic degrees satisfies only the former minimal demand, so that such illumination might not be adequate for intensive work. In this measurement the reflected light is left entirely out of account, for which reason, many places that have not the light represented by 50 quadratic degrees of celestial space may nevertheless be adequately illuminated. It is even more difficult to state whether an apartment may be regarded as adequately lighted. In such cases it should be required that at least one third of the floor space should receive the direct rays of light. As a rule, it is sufficient to hold a small mirror 1 meter from the floor and 1 meter from the window and see whether the sky can be seen in it. If that is the case the room can usually be regarded as adequately lighted, provided the desks or work tables are located near the windows.

A Merger of Social Insurance and Public Welfare Bureaus

A merger of all the public health and welfare centers in the province and the free state of Waldeck has been brought about in order to prevent public health and welfare work in the rural districts from deteriorating. The district leagues, the free state of Waldeck, the provincial insurance bureau, the agricultural bureau, the leagues of the health insurance societies and the central insurance bureau for employees have formed a merger in order to combine their slender means and place them at the disposal of the welfare bureaus, with the idea that thus the arrangements already made for combating tuberculosis, the establishment of homes for convalescents and the creation of infant welfare stations will be better preserved and, if feasible, further improved. In this merger the medical profession is represented by a physician from each district. It is estimated that, during 1923, 22 million marks will be available to carry out the plans of the merger. According to the expressed wishes of the donors, the funds are not to be given to the welfare bureaus with no conditions attached, but are to serve as a stimulus to renewed activity on the part of the forces already lined up in the various societies. Therefore, the local welfare societies will not be able to draw on the central funds unless they can show that they are equipped to do welfare work and that they themselves are raising money for this purpose. When this proof has been furnished the central office, the local societies will be granted a subsidy, the maximal amount of which will be equal to twice the amount of money the local societies have themselves raised. The merger also claims the privilege of making suggestions to the local societies as to the best means of carrying on public health and welfare work, and it is assumed that the local societies will give these suggestions careful consideration and be guided thereby as far as possible in the local administration of their work.

A New Center for the Testing of Drugs.

In recent months, various writers for THE JOURNAL, including myself, have called attention to the endeavors of the Deutsche Gesellschaft für innere Medizin in creating, several years ago, a testing center for drugs, at the head of which was Professor Penzoldt, formerly director of the Erlangen Medizinische Klinik, with whom was associated Professor Holste, the pharmacologist, of Jena. Recently the establishment of a new testing center for drugs has been undertaken through the cooperation of the central league of the German local health insurance societies and the commission of the Deutsche Gesellschaft für innere Medizin. It is evident that the health insurance societies are particularly interested in keeping worthless drugs away from their patients and in preventing useless expense by the use of immoderately priced preparations. For this reason, they had previously established their own testing center at the headquarters of the board of directors. This arrangement, however, has not proved to be entirely adequate for their service. Without the cooperation of the medical profession, and especially the aid of the clinicians and pharmacologists, the desired goal was not attainable. It remains to be seen whether this new cooperative body will be more successful.

Marriages

GEORGE A. MACQUEEN, Charleston, W. Va., to Mrs. Nelle Eubank of Hot Springs, Ark., February 1.

THOMAS DEWEY DAVIS, Richmond, Va., to Miss Willie Evelyn Owens of Marion, S. C., recently.

WILLIAM BURNS MCMURTRIE, Marble, Minn., to Miss Helen E. Thompson of Minneapolis, in January.

ALFRED A. GUMBINER, Los Angeles, to Miss Hope Florence Gibb of Ottawa, Canada, February 28.

JESSE I. JONES, Manchester, Iowa, to Mrs. Irma Frank Howell of Independence, recently.

MAURICE W. MCINERNY to Miss Elizabeth Marshman, both of Minneapolis, in January.

BERNARD L. TREY to Miss Florence Minor, both of Marshalltown, Iowa, recently.

LAETITIA L. BELAU to Mr. John C. Alford, both of Chicago, March 10.

Deaths

Arpad Geyza Gerster, New York; University of Vienna, Austria, 1872; emeritus professor of surgery at the New York Polyclinic Medical School and at one time professor of clinical surgery at Columbia University College of Physicians and Surgeons; member of the Medical Society of the State of New York; the Southern Surgical and Gynecological Association, the American Gastro-Enterological Association, the German Surgical Association, the Berlin Academy of Medicine, corresponding member of the Royal Medical Society of Budapest and former president of the American Surgical Association; on the staffs of the Lenox Hill and Mount Sinai hospitals, and the Isabella Home; author of *The Rules of Aseptic and Antiseptic Surgery, and Recollections of a New York Surgeon;* aged 74; died, March 17, of angina pectoris.

Herbert Burr Howard, Reading, Mass.; Medical School of Harvard University, Boston, 1884; died suddenly, March 6, at Lynchburg, Va., of heart disease. Dr. Howard was born in Fitchburg, Mass., in 1855. He was superintendent of the Peter Bent Brigham Hospital, Boston (1908-1919), a member of the Massachusetts Medical Society, the Boston Society of Psychiatry and Neurology, the New England Society of Psychiatry, the American Psychiatric Association, the Massachusetts State Board of Insanity (chairman 1908-1913), the Boston Society for Medical Improvement, the Boston Medical Library, and formerly president of the American Hospital Association. Dr. Howard was chairman of the Hospital Section of the American Medical Association in 1913.

William Post Herrick, New York; Columbia University College of Physicians and Surgeons, New York, 1898; member of the Medical Society of the State of New York; the American Urological Association, and the American Public Health Association; formerly instructor of surgery at the New York Post-Graduate Medical School; on the staffs of the Vanderbilt, New York, and Metropolitan hospitals, the DeMilt Dispensary and the Hospital for the Ruptured and Crippled; served in the M. C., U. S. Army, during the World War; aged 53; died, March 13, at St. Luke's Hospital, of pneumonia.

George Brune Shattuck ✠ Boston; Medical School of Harvard University, Boston, 1869; formerly instructor of clinical medicine, and overseer at his alma mater; past president of the Massachusetts Medical Society, and the Boston Medical Library Association; senior physician to the Boston City Hospital and at one time president of the Massachusetts Charitable Eye and Ear Infirmary; ex-editor of the *Boston Medical and Surgical Journal;* aged 79; died, March 12.

Samuel Whitehill Latta ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1868; member of the state board of medical examiners, the American Public Health Association, formerly president of the Pennsylvania Railroad Surgeons' Association; Civil War veteran, assistant surgeon U. S. Navy, 1868-1873; chief medical examiner for the Pennsylvania Railroad, 1886-1918; aged 74; died, March 13, of heart disease.

Patrick Henry McCarthy, Butte, Mont.; John A. Creighton Medical College, Omaha, 1902; member of the Radiological Society of North America; served in the M. C., U. S. Army, during the World War; member, and at one time president, of the state board of medical examiners; for fifteen years on the staff of St. James Hospital; aged 47; died, March 9, at Rochester, Minn., of pneumonia, following an appendectomy.

Logan Dillon Hooper Russell, Liverpool, England; M.R.C.S., London, England, 1870; F.R.C.S., Edinburgh, Scotland, 1880; University of Vermont College of Medicine, Burlington, 1884; for several years justice of the peace in Jamaica, West Indies; medical officer of health for the Port of Bonny, West Africa; formerly a practitioner in the United States and Canada; died, February 13, aged 72.

James Joseph Roach, Chicago; Rush Medical College, Chicago, 1901; member of the Illinois State Medical Society; professor of operative surgery and pathology, Chicago Medical College; formerly instructor in anatomy at Northwestern University Medical School, and on the staffs of the Cook County, Fort Dearborn and St. Bernard hospitals; aged 45; died, March 24, of cerebral hemorrhage.

Alexander Everett Harris ✠ Little Rock, Ark.; Jefferson Medical College of Philadelphia, 1901; formerly professor of clinical medicine at the University of Arkansas Medical Department, Little Rock, and on the staffs of the Memorial City and St. Vincent's hospitals; served in the M. C., U. S. Army, during the World War; aged 44; died, March 7.

Samuel Albert Graham ✠ Lincoln, Ill.; Rush Medical College, Chicago, 1887; formerly district health officer for Central Illinois; for five years assistant superintendent of the Kankakee State Hospital, Kankakee; superintendent of the Lincoln State School and Colony, Lincoln; aged 74; died, March 10, of pneumonia.

Eugene Daniel McCarty, Columbus, Ky.; National University of Arts and Sciences Medical Department, St. Louis, 1915; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 33; died suddenly, March 7, of cerebral hemorrhage.

Clarence Augustus Jacobson, Chicago; University of Illinois College of Medicine, 1916; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Veterans' Hospital No. 76 (Edward Hines, Jr., Memorial), where he died, aged 29, March 22, of appendicitis.

Richard Franklin Bennett, Litchfield, Ill. (licensed, Illinois, 1887); served for five terms as mayor of Litchfield; member of the state board of health, former president of the school board and superintendent of the Hospital for the Insane, Anna; aged 83; died, March 9, of senility.

Walter Nevin Sharp ✠ Indianapolis; University of Vermont College of Medicine, Burlington, 1885; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly on the staff of the Indianapolis City Hospital; aged 64; died, March 8, of pneumonia.

Charles Ammon Wishart ✠ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1875; member of the American Academy of Ophthalmology and Oto-Laryngology; founder of the Columbia and the Eye and Ear hospitals; aged 70; died, March 4.

William Buford Pigg, Okmulgee, Okla.; Kentucky School of Medicine, Louisville, 1882; member of the Oklahoma State Medical Association; formerly president of the Okmulgee County Medical Society; aged 62; died, March 7, at Richmond, Ky.

Winfield Scott Hill, Augusta, Me.; Bellevue Hospital Medical College, New York, 1867; practitioner in Augusta for fifty-five years; surgeon to the Augusta City Hospital; veteran of the Civil War; aged 84; died, March 7, of acute bronchitis.

Edwin Clifford Chipman, New London, Conn.; Medical Department of Columbia College, New York, 1891; member of the Connecticut State Medical Society; president of the Home Memorial Hospital, where he died, March 9, aged 62.

H. M. Cox, San Luis Obispo, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; formerly superintendent of the San Luis Obispo County Hospital and county health officer; aged 73; died, March 4, of cerebral hemorrhage.

John Hamilton Potter Conover ✠ Elizabeth, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; city bacteriologist; on the staffs of the St. Elizabeth's and General hospitals; aged 49; died, March 4.

Levi Welts Case ✠ Montclair, N. J.; Medical Department of Columbia College, New York, 1880; on the staff of the Essex County Hospital for Contagious Diseases, Belleville; aged 72; died, March 3, of cerebral hemorrhage.

Florence L. Marsh ✠ Mount Pleasant, Pa.; Jefferson Medical College of Philadelphia, 1868; Civil War veteran; founder and president of the Memorial Hospital; aged 74; died, March 10, of cerebral hemorrhage.

David Enrique Algorta, Lima, Peru; University of Nebraska College of Medicine, Omaha, 1922; serving his internship at the Swedish Mission Hospital, Omaha; aged 26; died, March 6, following an appendectomy.

Absolom Jerome Christopher, Laurens, S. C.; Atlanta Medical College, Atlanta, Ga., 1888; member of the South Carolina Medical Association; died, January 11, at Rochester, Minn., following an operation.

Ashbel A. P. Bridges, Danville, Ind.; Medical College of Indiana, Indianapolis, 1892; member of the Indiana State Medical Association; aged 67; died, March 14, at the Methodist Hospital, Indianapolis.

Miles Lewis Davis, Lancaster, Pa.; Bellevue Hospital Medical College, New York, 1870; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 78; died, March 8, of paralysis.

Charles L. Olsen, Salt Lake City, Utah; Eclectic Medical Institute, Cincinnati, 1898; former secretary of the board of medical examiners and member of the board of registration; aged 66; died, March 8.

Ethan A. Barnes, Plattsburg, N. Y.; University of Vermont College of Medicine, Burlington, 1885; member of the Medical Society of the State of New York; aged 61; died, March 17, of angina pectoris.

Walter W. Rangeley, Christiansburg, Va.; Baltimore University School of Medicine, Baltimore, 1896; member of the Medical Society of Virginia; aged 55; died, March 4, following an operation.

Joseph Rhodes, Chewton, Pa.; Bellevue Hospital Medical College, New York, 1874; for thirty years medical examiner for the Pennsylvania Railroad; aged 75; died suddenly, March 2.

Henry E. Battle, Andalusia, Ala.; University of Tennessee College of Medicine, Memphis, 1896; member of the Medical Association of the State of Alabama; died, March 5, of heart disease.

Edward Baumhoff Le Saulnier ✱ Eureka, Mo.; Barnes Medical College, St. Louis, 1910; veteran of the Spanish-American War; aged 47; died, March 9, following a long illness.

Addison McCurtain, Los Angeles; Louisville Medical College, Louisville, Ky., 1881; Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; aged 64; died, February 21.

John Isaac Darby, Columbus, Ga.; Louisville Medical College, Louisville, Ky., 1880; member of the Medical Association of Georgia; aged 71; died, March 4, at Panama City, Fla.

Herbert G. Richards, Glastonbury, Conn.; Eclectic Medical Institute, Cincinnati, 1879; aged 66; died, February 23, at the Hospital of St. Raphael, New Haven, following an operation.

Samuel W. Murphy, Washington, D. C.; Medical College of Virginia, Richmond, 1863; Confederate veteran; aged 85; died, February 27, at the John Dickson Home, of senility.

Burton Edgar Manchester, Milwaukee; University of Buffalo (N. Y.) Department of Medicine, 1886; aged 58; died, March 8, at Columbia Hospital, following an operation.

Frederick Tigh ✱ Newburyport, Mass.; Medical School of Harvard University, Boston, 1889; on the staff of the Anna Jaques Hospital; aged 60; died, March 3, of pneumonia.

Clarence Resseguie Blake, Northville, N. Y.; University of Vermont College of Medicine, Burlington, 1884; aged 60; died, March 12, of cerebral hemorrhage, due to a fall.

Edward Bair, Murphysboro, Ill.; Medical College of Indiana, Indianapolis, 1890; died, March 7, of an overdose of heroin hydrochlorid, presumably self-administered.

Robert Donald Reynolds ✱ Greenspring, Ohio; Medical Department of Western Reserve University, Cleveland, 1897; aged 56; died, March 6, of influenza and pneumonia.

Mariette Grant, New York; Eclectic Medical College of the City of New York, 1891; aged 55; died, February 16, of a skull fracture sustained when struck by a taxicab.

Albert Sperry Pierce, Omaha; Georgetown University School of Medicine, Washington, D. C., 1867; Civil War veteran; aged 83; died, March 8, of senility.

Jesse Robert Gilbert ✱ Alamogordo, N. M.; University of Louisville Medical Department, Louisville, Ky., 1894; aged 52; died suddenly, of heart disease, March 1.

Herbert Pinckney, New York; Medical Department of the University of the City of New York, New York, 1898; aged 64; died, March 10, of heart disease.

James O. Latimer, Rock Creek, Ohio; Eclectic Medical Institute, Cincinnati, 1868; Civil War veteran; aged 86; died, January 30, at Grand Junction, Colo.

Benjamin Green Brown, Dalton, Ky.; University of Tennessee College of Medicine, Memphis, 1882; aged 72; died recently, following a long illness.

W. E. Arnold, Prescott, Ark.; Atlanta Medical College, Atlanta, Ga., 1861; Civil War veteran; aged 85; died, February 25, following a long illness.

Charles Manning Freeman, Metuchen, N. J.; Medical Department of Columbia College, New York, 1884; aged 63; died, March 7, of heart disease.

Joseph N. Gardner, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1889; aged 63; died, February 22, of heart disease.

Marion Fairweather Stirling, San Leandro, Calif.; Northwestern University Woman's Medical School, Chicago, 1885; aged 68; died, February 28.

Richard Lee Bohannan, Stamford, Conn.; New York University Medical College, New York, 1874; aged 71; died, March 4, of heart disease.

Harold Metcalf ✱ Wickford, R. I.; Medical School of Harvard University, Boston, 1887; aged 62; died, March 3, of cerebral hemorrhage.

Thomas Jefferson Jacobs, Somerfield, Pa.; New York University Medical College, New York, 1878; aged 69; died, March 9, of pneumonia.

George W. Bulmer, Brooklyn; New York Homeopathic Medical College, New York, 1884; aged 67; died, March 8, of cerebral hemorrhage.

Phoebe N. Bucknam, Brooklyn; Hygeio-Therapeutic College, Bergen Heights, N. J., 1866; also a druggist; died, February 17, aged 80.

David Ginther, North Manchester, Ind.; Eclectic Medical Institute, Cincinnati, 1891; aged 74; died, February 18, following a long illness.

Herbert Henry King, Unionville, Mich.; Michigan College of Medicine and Surgery, Detroit, 1905; aged 41; died, March 5, of diabetes.

Albert Sanders Burtt ✱ Momence, Ill.; New York University Medical College, New York, 1878; aged 68; died, March 10, of pneumonia.

John R. Couch, Richmond, Va. (licensed, years of practice); member of the Medical Society of Virginia; aged 54; died, March 2.

Edgar Thomas Smith, Boonsboro, Md.; Bellevue Hospital Medical College, New York, 1886; aged 62; died, March 9, of pneumonia.

William G. Scott, Los Angeles; Cincinnati College of Medicine and Surgery, Cincinnati, 1862; aged 84; died, February 26, of senility.

Joseph Frank McMahon, New York; Bellevue Hospital Medical College, New York, 1882; aged 64; died suddenly, February 20.

Robert Alfred Windett ✱ Aurora, Ill.; Rush Medical College, Chicago, 1887; aged 63; died, March 4, following a long illness.

Hugh Livingston ✱ Hopkinton, Iowa; Rush Medical College, Chicago, 1890; also a druggist; aged 79; died, March 10, of senility.

A. D. Berryhill, McKenzie, Tenn.; University of Tennessee College of Medicine, Memphis, 1892; aged 58; died, March 4, of uremia.

John T. Dougherty, Hudson, Pa.; Baltimore University School of Medicine, Baltimore, 1896; aged 54; died, February 27.

Thomas J. Gipson, Lawton, Okla.; University of Arkansas Medical Department, Little Rock, 1889; aged 61; died, February 2.

Nelson Clifton Davis, Boston; Medical School of Harvard University, Boston, 1909; aged 40; died, March 2, of tuberculosis.

Thomas Griffin O'Connor, Imogene, Iowa; Rush Medical College, Chicago, 1896; aged 50; died, March 6, of pneumonia.

James B. F. Morgan, Clarksburg, Ohio; Medical College of Ohio, Cincinnati, 1869; aged 86; died, March 6, of neuritis.

John Silas Bass, Iola, Kan.; Meharry Medical College, Nashville, Tenn., 1878; aged 72; died, March 4, of pneumonia.

Albert Smilie Hague ✱ Fairfield, Iowa; Keokuk Medical College, Keokuk, 1897; aged 51; died suddenly, March 12.

Edgar Alonzo Ward, Hedgesville, W. Va.; Kentucky School of Medicine, Louisville, 1893; aged 69; died, March 6.

Nota A. Glebow, Boston; University of Würzburg, Germany, 1908; aged 49; died, February 27, of influenza.

Thomas Kittredge ✱ Salem, Mass.; Long Island College Hospital, Brooklyn, 1874; aged 70; died, March 11.

John Butler Grover ✱ Peckville, Pa.; Albany (N. Y.) Medical College, 1892; aged 54; died, February 21.

Jesse Augustine Swem, Henry, Ill.; American Medical College, St. Louis, 1884; aged 64; died, March 1.

Jasper Tope, Algonquin, Ohio (licensed, Ohio, 1896); aged 87; died, March 3, of senility.

H. L. Bowyer, Emory, Va. (licensed, years of practice); died, January 28.

Correction.—In THE JOURNAL, March 17, it was erroneously stated that the late Dr. Carroll Kendrick was a member of the Kentucky State Medical Association; this should have read Mississippi State Medical Association, of which he was formerly president.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PERALGA

A New Foreign "Synthetic"

For the past few years, American physicians have been relatively free from the propaganda of the foreign synthetic drugs—real or alleged. Recently, however, there have been signs of a revival of this type of product. One of the products now being endowed with the halo of creative chemistry

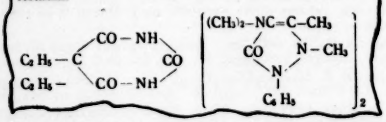
AMONG the most ambitious aims of modern Creative Chemistry, and closely in line with recent pharmacologic teachings, is the endeavor to intensify a given, therapeutically valuable, radical in one chemical compound by synthesis with a radical of similar therapeutic action in another.

If, in the course of this synthetic procedure, the drawbacks and undesired by-effects of either are simultaneously eliminated, the resulting new compound must be regarded as a valuable and welcome new remedy.

PERALGA, known in Europe as "Veramon," a new synthetic analgesic, originated in the Pharmacologic Laboratory of Prof. Starkenstein, University of Prague, Czecho-Slovakia, well known for his Atophan researches, furnishes a rather brilliant illustration of what can be accomplished in this direction.

Here the soundly established, rational pain-relieving properties of Amidopyrine have been chemically potentiated by the highly valued sedative properties of Diethylbarbituric Acid, while the hypnotic effect of the latter has been eliminated.

The result is a definite chemical compound of the formula:



Photographic reproduction (reduced) of part of a Peralga advertising circular. Note the formidable structural formula (alleged) reminiscent of a decade ago.

is Peralga (Schering & Glatz), known in Europe as Veramon. But let Schering & Glatz describe the new creation—the new chemistry (according to S. & G.) "to intensify a given, therapeutically valuable, radical in one chemical compound by snythesis with a radical of similar therapeutic action in another":

"Peralga, known in Europe as 'Veramon,' a new synthetic analgesic, originated in the Pharmacologic Laboratory of Prof. Starkenstein, University of Prague, Czecho-Slovakia, well known for his Atophan researches, furnishes a rather brilliant illustration of what can be accomplished in this direction."

Incidentally it might be said that Starkenstein has lent his name to a number of statements valuable to the proprietary interests, but which cannot stand scientific light.

Peralga, it is claimed, is a "definite chemical compound," the alleged structure of which appears in the accompanying illustration reproducing a page from an advertising circular. According to Starkenstein Peralga is made by heating a mixture of diethylbarbituric acid (barbital) and amidopyrin (first introduced as "Pyramidon"). It is also claimed that Peralga is absorbed without being split up into its component radicals.

To a chemist, this new "synthetic" resembles a mixture more than it does a compound; it is reminiscent of the days of fake synthetics. Consequently the A. M. A. Chemical Laboratory investigated Peralga. The product is a yellow powder with a methylamine-like odor. It is claimed to melt at 95-97 C., to be readily soluble in hot water and organic solvents, less soluble in cold water. As already mentioned it is said to be formed by heating a mixture of barbital and amidopyrin until fusion takes place.[1]

That Peralga is *not* a "definite chemical compound" as claimed will be seen from what follows: When Peralga is treated with water, or 0.2 per cent. hydrochloric acid solution, in sufficient quantity easily to dissolve the theoretical amount of amidopyrin, an insoluble substance can be removed. The latter has the melting point of barbital and when mixed with a known specimen of barbital, the melting point is not depressed thus identifying it as barbital. In common with barbital, Peralga is more soluble in sodium bicarbonate solution than in water. It is readily soluble in sodium hydroxid solution. Some Peralga was dissolved in sodium hydroxid solution, and shaken, in a separator with chloroform, the choloroform extract was evaporated to dryness in a current of warm air. The substance melted at 103 C. to 105 C., a mixture of the substance and amidopyrin melted at 105 C. to 107 C., and the amidopyrin control melted at 107-108 C. This shows the extracted substance to be practically pure amidopyrin. Quantitatively the amount of barbital extracted from Peralga was 26.1 per cent. and the amidopyrin extracted was 72.0.

Evidently, then, Peralga is not a "definite chemical compound." From a chemical viewpoint it seemed improbable that Peralga (a fusion mixture of barbital and amidopyrin with some decomposition product) will produce any effect different from a mechanical mixture of barbital and amidopyrin in the same proportions.

To determine this, a mechanical mixture of barbital and amidopyrin in the same proportion as in Peralga and also some original Peralga were sent to the Pharmacologic Laboratory of Cornell University Medical College for comparative tests. The summary of the laboratory report was:

> "We can see no difference in the behavior of cats towards similar doses of the two preparations: the mechanical mixture made in the A. M. A. Chemical Laboratory and the preparation of Schering & Glatz—and they show very little difference between similar doses of barbital and those contained in Peralga. . . . Of course, there is no chance to make observations on cats that would show analgesic actions in headache. But since the observable effects on cats are so nearly identical, it is only fair to presume that the 'synthetic' and the mixture are practically alike in action."

Thus it is seen that Peralga, stripped of the glittering claptrap, is revealed as essentially a mixture of two well known drugs—deserving no claim of originality; in fact it contains a chemical impurity caused by decomposition of the mixture under heat. Certain it is that a mixture of barbital and amidopyrin is not a contribution to synthetic chemistry[2] as we know the term in this country.

1. If barbital or amidopyrin is placed in an oven at 100 C., no apparent change takes place; but when mixed fusion occurs (such as happens in a depressed melting point determination), with formation of yellow color and amine odor. In this manner there is formed a relatively small amount of a decomposition product, or probably products, not identified.

2. Since this was written, an abstract of an article by J. Herzog has been published (Chem. Zentralbl., Feb. 14, 1923) wherein essentially the same conclusions are reported as given above.

Necropsy Findings After Clinical Cure of Leprosy.—The sailor of 59 seemed to have recovered completely from his severe mutilating leprosy, under several years of local and general treatment at Hamburg. After two years without any signs of recurrence, he succumbed to an intercurrent pneumonia, and necropsy revealed a recent leprous infection in the ulnar nerve, with lepra bacilli. This was the only focus discoverable. The case is reported by Unna and Plaut in the *Dermatologische Wochenschrift* **75**:1013, 1922.

Correspondence

THE STATUS OF THE CLINICAL PATHOLOGIST

To the Editor:—When is a physician not a physician?

Answer: When he is a clinical pathologist.

This is apparently the opinion of the Advertising Committee of the American Medical Association, as expounded in THE JOURNAL, Dec. 2, 1922, p. 1937, reporting the session of the trustees at which the question of commercial laboratories came up for discussion. The impropriety of their advertisements as being subversive of the Code of Ethics as well as of good taste had been called to the attention of the trustees by the American Society of Clinical Pathologists, a national organization of the ethical laboratory men of the country. The members of the society firmly adhere to the thesis that the status of the clinical pathologist is on a par with that of the internist, surgeon or other specialist or consultant in medicine, and he is, therefore, subject to the same code of ethics and high moral standards. This is formulated in the By-Laws of the American Society of Clinical Pathologists as follows:

SECTION 1.—The Code of Ethics of this society shall be the same as that of the American Medical Association.

SECTION 2.—It is deemed unethical to publish advertisements in medical journals calling attention to the merits of a particular laboratory or announcing the fees for laboratory examinations.

SECTION 3.—It shall be deemed unethical for a member of the society to lend his name for publication in the laboratory advertisements violating this Code of Ethics.

The justice of the request for elimination of the objectionable advertisements was so apparent that the trustees at a previous meeting had decided in its favor. At a subsequent session, however, the Advisory Advertising Committee brought forward a report which caused the board to rescind its action. The arguments advanced by the committee are so astounding as to merit a rebuttal from outside.

[The Board of Trustees made no previous decision regarding the advertising of commercial laboratories. The Advertising Committee had presented a report to the Executive Committee of the Board, and the Executive Committee referred the report to the full Board of Trustees.—ADV. COMM.]

OMISSION OF PRICE

Under the head, "Omission of Price," the Advertising Committee says:

The omission of price permits the man who calls himself a laboratory specialist to make charges for laboratory tests on a sliding scale. Such variations in price are not warranted by the character of the work done. It permits the laboratory man to be a superspecialist of that type which is being opposed in other branches of the profession. The status of the clinical pathologist is not the same as that of the internist or surgeon. The latter deals with variables—human beings. The former conducts manipulations on fixtures—inanimate substances. If the tests are scientifically performed, the results must be the same in the hands of all well-qualified men. Personality does not enter in; training does. It is known that when the prices are not generally known, some laboratories charge physicians unwarranted fees for services. At the same time, when prices are not made public, an unscrupulous physician may charge patients unwarranted prices for laboratory work. Such work as the Wassermann test, urinalysis, blood counts and similar technical procedures are standard *commodities* which can be furnished by persons of a certain minimum training at a reasonable fixed price which may be estimated and controlled through the advertising committee of THE JOURNAL.

Assuming, for a moment, that a Wassermann test is as staple a commodity as, say, a quart of milk, we even find great variations in the price of the latter in different groceries or creameries. If it is the object of the committee "in the interest of the patient and physician" to reduce laboratory fees to the same dead level, why permit these fluctuations of prices in the advertisements? The American Medical Association, following the logic of the committee, should start a holy crusade against variations in fees for appendectomy—an operation which may be termed standardized, only differing from a Wassermann test in that it is a scientific procedure in vivo, while the Wassermann test is in vitro. The reasoning is, of course, a reductio ad absurdum. Just as there are differences among surgeons in their learning, judgment and technic, so there are among pathologists.

[It should be reiterated that routine laboratory tests and examinations are in no way comparable to surgical operations. Routine tests, as a rule, deal with materials outside the body, while surgical operations are made on the living patient.—ADV. COMM.]

As physicians and gentlemen, both can be trusted to serve the best interests of their patients without heralding from the house tops the price of their work. They should be accorded the same right to fix a value on their services as any other professional men. "The Wassermann or urinalysis is a commodity!" says the Advertising Committee. This is the unkindest cut of all. In real life what do we find? The clinician goes over the case with the pathologist—he tells him the history of the patient, gives him the findings of the physical examination, inquires what laboratory tests would aid in the diagnosis and, lastly, when the tests are performed, asks for an interpretation, and the two coordinate their laboratory and clinical investigation toward making the diagnosis.

[The statement that "in real life . . . the clinician goes over the case with the pathologist" and asks the pathologist what tests are to be made does not hold good in even 1 per cent. of cases in our larger cities, and is not at all applicable to smaller communities. It is safe to say that there are not specialists in clinical pathology available for 1 per cent. of such consultations as Dr. Hillkowitz states are regularly held over all patients by the clinician. Certainly, the general practitioner, and particularly those physicians practicing in smaller towns, when in need of laboratory service depend on the regularly established commercial laboratories or on the state laboratory. From the very nature of the case, the specialist in clinical pathology conducts laboratory examinations on a relatively small scale with a naturally higher price, while the commercial laboratory carries on its work on a large scale, and can well afford to do so at a low price. —ADV. COMM.]

The committee says that we are not dealing with variables. If determination of the basal metabolic rate of a nervous patient is not working on a variable, we would like to know their definition of a constant. Where would the committee classify the quick decision whether a breast tumor is benign or malignant while the patient is on the operating table? If we are to employ the mathematical terminology of the committee, the pathologist is dealing with a variable of transcendental functions requiring solution by a ratiocination as difficult as integral calculus.

PERSONNEL

Says the committee, "The personnel is a variable factor in laboratory service." We are grateful for this grudging admission of variability. "Hence," argues the committee, "the personnel should be published and thus, in the interests of the physicians and public alike, . . . stimulate competition on the basis of qualification of those doing the work." If this is so, then why in the name of the physicians and the public shall we not encourage the surgeons to advertise their qualifications and their fees for the operations in the pages of THE JOURNAL so that the family physician may know on whom to call and protect his patients from exorbitant charges of so-called supersurgeons? For, in the words of the committee, "The interests of the public are served by competition, provided that advertised claims are verified and honestly established; they are not served by the secrecy that

would inevitably follow if advertising of laboratory service were limited merely to the names of individual clinical pathologists."

To this we would reply that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has the choice of two methods: Either investigate the individual clinical pathologist before accepting his card, or, what is the better solution, refuse all advertisements from clinical pathologists as it would that of the surgeon or other specialist.

[Dr. Hillkowitz urges that commercial laboratories be prohibited from advertising in medical periodicals, but he seems willing that proprietors of laboratories be permitted to advertise by means of cards as "specialists in clinical pathology."—ADV. COMM.]

CONSULTANTS

A deplorable phase in the evils of laboratory advertising is the organization of commercial clinical laboratories on the "chain of stores" idea. Men of ability, occupying teaching positions in medical schools, are tempted by the offer of higher salaries either to relinquish their academic posts and take up a directorship in one of the branch laboratories, or to retain their former chair, and lend dignity to the commercial establishment by functioning as consultants. If socialization of medicine is combated by the rank and file of the medical profession, what should be our attitude toward exploitation of medical talent by a private corporation?

Behold, then, the lamentable spectacle of a body of physicians—clinical pathologists—begging the great American Medical Association to let them practice their specialty in accordance with the A. M. A. Code of Ethics, only to be told that they are not in the same category as their colleagues—that they are only technicians—pariahs, as it were, in the eyes of the healing caste. Shades of Koch and Pasteur! To think that clinical pathology—the most scientific of the specialties, the one based on precision, clear thinking, cold logic, the branch of medicine that requires a knowledge of all the allied sciences in addition to medicine—should be declared an outlaw! This will be a great blow to those who have chosen this field as their life's work.

In all seriousness, we would like to point out the great danger lurking in the dictum of the Advertising Committee. If no encouragement is held out to the clinical pathologist, if his activities are to be classed with department store bargain sales, he will forsake his specialty for the more lucrative and respected field of surgery or internal medicine for which his knowledge and previous training have eminently fitted him. Graduates in medicine will not take up the laborious study and long training in pathology. Communities will be left without the aid of this indispensable adjunct to diagnosis. In this period of standardization of hospitals, when half of the institutions cry in vain for competent laboratory directors, no obstacle should be thrown in the way of those aspiring to take up this field of medicine. There should be clinical pathologists in every community to promote the practice of scientific medicine by a wider application of clinical laboratory methods to the diagnosis of disease.

We do not question the motives of the Advertising Committee. We have no doubt that they are actuated by what they consider the best interests of THE JOURNAL, the profession and the public. The American Medical Association, however, is a democratic organization. We present our side of the case to the entire medical profession in the columns of our official journal. We are confident that the Association which has successfully fought for proper medical education and which has eradicated the nostrum evil in medical advertising will also help us check the commercial degeneration of this important branch of medicine. We have no doubt that eventually the American Medical Association will answer that a physician is always a physician even when he is a clinical pathologist.

PHILIP HILLKOWITZ, M.D., Denver.

[COMMENT.—The comments in brackets in the preceding communication were made by the Advertising Committee of THE JOURNAL and are endorsed. In taking this stand, the Advertising Committee was concerned primarily with the interests and every-day practice of the general practitioner, with the best possible service to the public and with the greatest good for the greatest number. It is believed that THE JOURNAL is doing good in making available information regarding such laboratories which the general practitioner outside of the large cities needs. No advertisement of a laboratory is admitted to the advertising pages of THE JOURNAL until the laboratory has been investigated as to the equipment, the type of work done, the personnel, and the ethical manner in which the work is conducted.—ED.]

CANCER STATISTICS FOR JAPAN

To the Editor:—Some of your readers may be interested in cancer statistics for Japan, which have recently reached me and which I have consolidated into the form of a five year average, for the period 1914-1918. For the empire of Japan the total mortality from cancer was 192,530, equivalent to a rate of 70.0 per hundred thousand. For males separately considered, the rate was 70.8, and for females, 69.2. This close conformity of the two sex rates would indicate a relatively high measure of accuracy in terminal diagnosis.

For the city of Tokyo separately, and also for the period 1914-1918, there were 7,677 deaths from cancer among both sexes, equivalent to a rate of 79.6 per hundred thousand population. For males the rate was 81.4, and for females, 77.7. The excess rate for Tokyo, over the rate for Japan, is in conformity to general experience, and also supports the conclusion that terminal diagnosis has reached a high degree of perfection in Japan, probably as much so as the corresponding conditions in this country.

The cancer problem in Japan is one of extraordinary interest and well deserving of more critical consideration. Cancer of the female breast is very rare among Japanese women, the rate being approximately one tenth of the corresponding rate for the women of this country and Great Britain. Regardless of this fact, the general cancer death rate of Japan must be looked on as having reached almost the same alarming proportions as the disease has in this country.

FREDERICK L. HOFFMAN, Newark, N. J.

THE ABDOMINAL REFLEX IN EPIDEMIC (LETHARGIC) ENCEPHALITIS

To the Editor:—In an earlier paper (June, 1922), I mentioned the frequency of changes in the abdominal reflex in epidemic encephalitis, and stated that I felt this had not been sufficiently emphasized. With this thought in mind, the last fifty cases examined (most of them seen during the epidemic of the past winter), have been carefully studied with reference to this symptom, with these findings:

Normal reflex in all quadrants	8
Absent reflex in all quadrants	26
Absent reflex in one quadrant	6
Absent in quadrants of one side, normal opposite side	2
Absent in quadrants of one side, present but rapidly exhausted on opposite side	3
Absent in upper quadrants, normal in lower quadrants	1
Absent in upper quadrants, rapidly exhausted in lower quadrants	1
Present in all quadrants, but exhausted after two or three attempts	2
Present in all quadrants, but distinctly exaggerated on one side	1
Total	50

The abdominal reflex was normal only eight times, or in 16 per cent. of the cases, and in the patients seen within one month of the onset of the disease only three presented normal abdominal reflexes in all quadrants. Of the remaining five patients, one had developed the infection six months previous to the examination, one eight months, two two years and one three years.

To offset this, the reflex was absent in all of the abdominal quadrants in patients as late as one and one-half years, one year and eight months, and two and one-half years after the initial infection.

On the foregoing facts, I feel justified in concluding that change in the abdominal reflex is an important diagnostic sign of epidemic encephalitis, and that when the case is seen early (within the first month), it is the most frequent single neurologic symptom.

It may be of interest to note that during the epidemic of the past winter in the Northwest, the radicular and myoclonic types of the disease predominated, and that the greatest number of cases developed during or shortly after a severe cold wave, in which the thermometer registered from 10 to 15 degrees below zero.

GEORGE E. PRICE, M.D., Spokane, Wash.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PRIZES FOR RESEARCH

To the Editor:—Please publish a list of the various prizes offered for research papers by American foundations, societies and associations.

G. S. M., Missouri

ANSWER.—The following list of prizes was compiled from the columns of THE JOURNAL. THE JOURNAL will be glad to hear of additional prizes not included in this list.

1. The Leonard prize of $1,000, awarded by the American Roentgen Ray Society for the best original research in the roentgen ray, radium or radioactivity fields of investigation. Papers are to be submitted by July 1, 1923, to G. E. Pfahler, M.D., chairman, 1321 Spruce Street, Philadelphia.

2. The Sofie A. Nordhoff-Jung cancer research prize of $500, awarded annually by a committee composed of members of the University of Munich for the most conspicuous work in cancer research.

3. The Casselberry prize fund of more than $500 (April 1, 1922) to be awarded for research in laryngology and rhinology. For further details write Dr. Norval H. Pierce, 31 East Washington Street, Chicago.

4. The Boylston medical prize of $300, awarded for the best paper on research in medicine. Address Harvard Medical School, Boston.

5. The Roaldes prize, an award of $200 by the American Laryngological Association for the best thesis on a subject connected with laryngology and rhinology.

6. M. Douglas Flattery fund, the income from a gift of $7,500 to Harvard Medical School to be used annually to present a gold medal and cash prize of $500 to him who in any branch of science discovers the greatest means of good to humanity in disease prevention and health conservation.

7. The Cartwright prize of $500, awarded every two years for original investigation by the Association of the Alumni of the College of Physicians and Surgeons, New York.

8. The Ebert prize of about $40, awarded annually by the American Pharmaceutical Association to the member who presented the best paper at the previous annual session.

9. The Samuel D. Gross prize of $1,500, awarded every five years by the Philadelphia Academy of Surgery for the best essay founded on original investigation in surgical pathology or surgical practice.

10. The Gorgas prize medal, awarded annually at the graduating exercises of the Army Medical School by the Association of the Medical Reserve Corps, New York State Division, for the paper that shows the most advance in medicine and surgery, preferably a medicomilitary subject.

11. The Alvarenga prize of about $180, awarded annually by the College of Physicians of Philadelphia for the best essay on any medical subject.

12. The University of Pennsylvania surgical prize of about $75, awarded annually to senior undergraduate students for the best essay based on observations at the university clinics in anatomy, physiology and pathology.

13. The Mary Putnam Jacobi research fund, a fellowship (value about $800), awarded by the Women's Medical Association of New York City to women medical graduates for graduate research work.

14. The George Crocker research fund of $1,500,000, supervised by Columbia University, New York, and for research only.

PRESCRIBING CODEIN SULPHATE

To the Editor:—What is the maximum amount of codein sulphate a pharmacist is legally permitted to supply to one patient, on a single prescription by a physician? Please omit my name. D. S. B.

ANSWER.—The Harrison Narcotic Law fixes no limit on the amount of any narcotic drug that a physician may prescribe. The prescribing of unusually large amounts, however, raises a question as to whether a physician may not be merely pandering to the cravings of a drug addict, and not treating an injury or a disease; and as a prescription issued merely for the purpose of satisfying the cravings of an addict is not a prescription issued in the course of professional practice within the meaning of Section 2 (a) of the Harrison Narcotic Law, and not only exposes to punishment the physician who issues it but affords no protection to a pharmacist who fills it, it is necessary for a pharmacist to exercise his judgment, for his own protection, and to refuse to fill prescriptions that he believes may expose him to penalties.

Where the prescribing of unusual quantities of narcotic drugs may be necessary because a patient is suffering from an incurable and painful disease, an understanding between the physician, the pharmacist and the internal revenue officer is established if the physician writes on the prescription "Exception 1, Article 117." Similarly, if a drug addict is so old and so infirm that withdrawal of the drug would jeopardize his life, his needs may be met and an understanding arrived at by a physician writing on the prescription, "Exception 2, Article 117." Even in such cases, however, a physician cannot prescribe a supply of narcotic drug to last an indefinite period, and under a memorandum issued by the Prohibition Commissioner (Pro. Mim. No. 217), a physician may not prescribe more than one week's supply of a narcotic drug to any one patient, without having obtained a special permit governing the case treated. For information as to the issue of such a special permit, the physician should communicate with the local collector of internal revenue by whom he was registered under the Harrison Narcotic Act.

What has been stated above with respect to narcotic drugs generally is true of codein sulphate, which, being a derivative of opium, comes within the purview of the Harrison Narcotic Act, no matter what the individual physician may believe with respect to its habit-forming properties.

ENDOCRINE THERAPY IN BALDNESS

To the Editor:—I shall appreciate any suggestion you may offer in this case: About fifteen years ago, a woman, at the age of 27, had a complete oophorohysterectomy and suffered the loss of a heavy head of hair almost immediately. Recently she has had an operation for rectocele, and the remaining hair has fallen out until she is practically bald. The scalp is tight and slick to the touch. Is there a glandular extract or other means that will restore the hair growth?

T. G. CALHOUN, M.D., Tenaha, Texas.

ANSWER.—Falling of the hair after illness or operation is usually thought to be due to a toxic disturbance, as a rule an intoxication that produces a febrile disturbance. The hair after this form of baldness very frequently regrows, but not always. No known endocrine fault is connected with baldness of this origin. Massage or other methods of stimulating the scalp by mechanical or other means may do some good. There is some ground for believing that certain forms of baldness, particularly extensive diffuse baldness, may be due to endocrine disturbance. The most tangible reason for this belief is that thallium salts, which produce endocrine disturbance, also cause baldness. There is no endocrine therapy that has proved to be definitely of use in any form of baldness, with the possible exception of the diffuse thinning of the hair that occurs in myxedema. For the ordinary forms of baldness, endocrine therapy has not been found useful.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
ILLINOIS: Chicago, April 10-12. Director, Mr. A. M. Shelton, Springfield.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

Iowa November Examination

Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Nov. 1-3, 1922. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University		(1922)	85.1, 90.4
Rush Medical College		(1882)	85.4
Harvard University		(1922)	89.1
University and Bellevue Hospital Medical College		(1922)	88.7
University of Budapest, Hungary		(1918)*	86.2

* Graduation not verified.

Rhode Island April Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, April 6-7, 1922. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

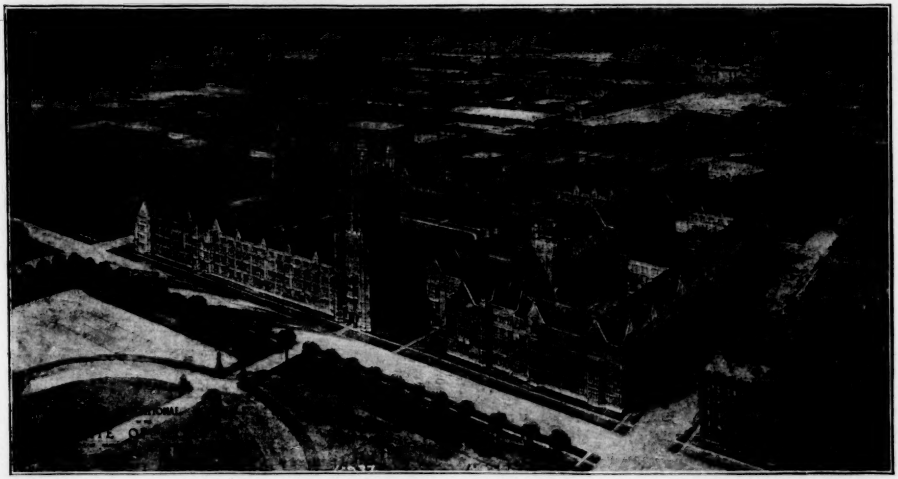
College	PASSED	Year Grad.	Per Cent.
Tufts College Medical School		(1903) 96, (1921)	88.2
Cornell University		(1918)	92.4
University of Toronto, Ontario		(1905)	95.3

NEW MEDICAL BUILDINGS OF THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The accompanying illustrations show the research and educational group of hospitals, laboratories and library, of the state of Illinois, which are now being erected by the state department of public welfare and the state university on the site of the old Cubs ball park in Chicago.

DISTRIBUTION OF SUBJECTS

The main building will contain the outpatient department, medicine, surgery, obstetrics and gynecology, together with some of the specialties, such as eye, ear, nose and throat, and dermatology. A large wing of the main building will be devoted to the study of nervous and mental diseases, and a separate building has been erected for crippled children. As a supplement to these buildings, which have been largely erected by the department of public welfare, the university is now erecting a research laboratory and library.



Research and educational hospitals.

When these buildings are completed, the group will form the nucleus of a great medical institution devoted to the study and teaching of the causation, prevention, alleviation and cure of disease, and the promotion of public welfare.

NATIONAL BOARD OF MEDICAL EXAMINERS

Report of Examination in Part III During 1922

A candidate to be eligible for Part III must have successfully passed Parts I and II and have completed one year in an acceptable hospital. The examinations in Parts III are entirely clinical and practical, and are held at the various subsidiary centers established in fifteen large cities in different parts of the country by the National Board. The candidates listed below have therefore been granted the Certificate of the Board, having now completed all of the requirements.

Name and Medical College	Year of Grad.
Ahlfeldt, Florence E., Woman's Medical College	1916
Braddock, William Hallock, Columbia Univ., P. & S.	1914
Darrow, Dan Cady, Johns Hopkins Medical College	1916
Dodd, William Earle, University of Pennsylvania	1916

Eagan, Joseph T., Yale University.....1917
Fink, Walter H., University of Minnesota.....1917
Forster, Neslen K., University of Illinois.....1915
Foshay, Lee, University of Pennsylvania.....1916
Gardner, Leon L., University of Pennsylvania.....1916
Hawkey, Vincent G., University of Pennsylvania.....1921
Hayman, Joseph M., University of Pennsylvania.....1917
Jennings, Mary Hill, Woman's Medical College.....1917
Kilgore, Allen M., Rush Medical College.....1918
Marx, Frederick William, Harvard Medical School.....1917
McFarland, Sadie, Woman's Medical College.....1917
Miller, Herbert Payne, University of Iowa.....1917
Nast, Max S., University of Pennsylvania.....1916
Neupauer, M. G. Adolph, Jefferson Medical College.....1917
Potter, James Craig, Johns Hopkins Medical College.....1917
Putnam, Marian C., Johns Hopkins Medical College.....1917
Riegel, Donald, University of Pennsylvania.....1918
Schaeffer, Howard William, University of Pennsylvania.....1917
Smith, Woodruff, Johns Hopkins Medical College.....1914
Spoenemann, Walter H., Rush Medical College.....1916
Starr, Merritt Paul, Rush Medical College.....1915
Stater, Wayne J., Harvard Medical School.....1917
Szikhs, Charles, Harvard Medical School.....1917
Van Den Berg, William J., University of Wisconsin.....1916

Miscellany

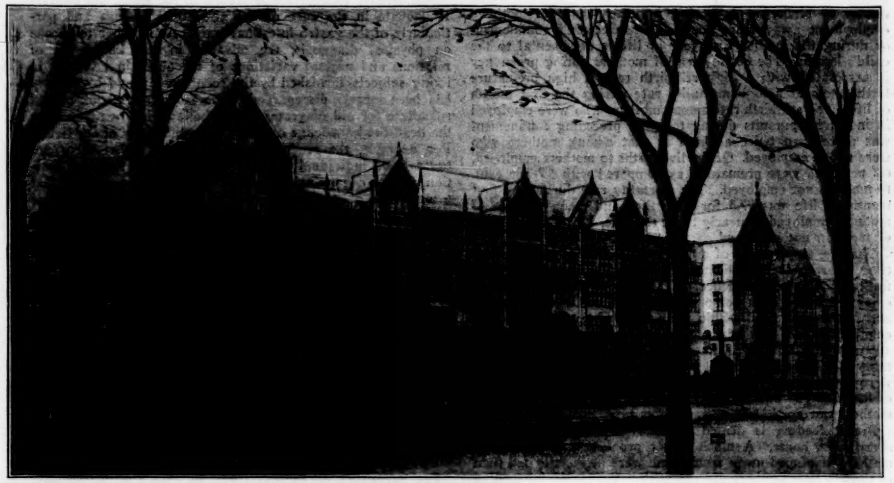
CHILD LABOR IN THE BEET FIELDS OF MICHIGAN

Children's Bureau representatives investigated more than 500 families in which either a child under 16, or a mother of a child under 6, worked in the beet fields of Michigan in 1920. A report of the investigation, soon to be issued by the Department of Labor, says that in the families studied, 67 per cent. of the children between 6 and 16 years of age were at work in the sugar-beet fields. One fourth of these child workers were less than 10 years old, and only one fifth were 14 years old or older.

Family labor in the Michigan fields was secured by agents of the sugar companies from Detroit, Chicago, Ohio, the mining districts of West Virginia, and even from Texas and Mexico. A miner from West Virginia said that he had come to the beet-growing country because his children were too young to work in the mines. All four of his children, the oldest 12, the youngest 5 years of age, worked in the fields; nine tenths of mothers having children under 6 years of age worked in the fields and did housework in addition. So long as pay for beet-field work is practically a family wage, the report states, it is not to be expected that children will be kept in school regularly.

Laborers are assigned as many acres to thin, hoe and harvest the beets, at a fixed rate per acre, as they and their families can take care of. The family working-day during the "thinning" season begins about 6 a. m., and continues, with a time for meals, until 6, 7, and sometimes 8 p. m. Over a fourth of the children worked from eleven to fifteen hours a day. One fourth of the laborers' families received less than $600 for six or seven months' work in the beet fields. In all but 7 per cent. of the families, the earnings from beet-field work were supplemented by the father's earnings from another occupation during the winter.

Three fourths of the children of school age included in the study had been absent from school on account of their work. Even children of workers who resided permanently in the district attended only 78 per cent. of the average school term, and a large proportion of these children were over age for



Research laboratory and library.

Averages Obtained

Cand. No.	Medicine	Surgery	Obstetrics & Gynec.	Public Health	Final Count
37	100	91.6	89.3	69	318.7
57	84	80.1	84	86	291
77	76.8	82.4	82	74	277.2
82	94.4	88.1	85	63	302.3
83	85.6	87.2	90	84	303
85	81.4	82.2	88	87	291.5
96	94.3	84.5	84.3	85	308.2
99	90.6	87.2	94	88	313.3
103	85.2	83.8	75	86	291.8
104	86.4	84.8	90	84	301
108	100	86.4	83.3	76	312.6
110	83.5	83.2	94	76	293.5
114	85.6	84.8	86	94	303
115	83.6	81.7	85	84	291.2
118	92.8	86	83.3	77	287.6
121	71.7	80	88	74	270.8
132	81.6	90.8	99	87	308.6
135	74.7	68	97	83	268.4
136	79.5	80.5	85	79	282.1
140	81.8	76.1	92	81	283.9
142	88.8	83.2	84	85	299.7
144	86	88.7	80	76	296.5
145	86.4	80	72	82	285
148	86	82.9	88	74	292.2
149	83.3	83.7	91	86	297.4
152	84.5	90.9	90	80	304.4
159	88.8	83.2	86	88	302
160	85.2	85.6	81	88	298.3

the grades they had attained. A supplementary study by the Children's Bureau, in the same three counties of Michigan, of the school attendance of children who did not work in the beet fields, showed that these children had about a third or a fourth as much absence from school as children working in the beet fields.

The sugar companies usually rented old farm houses for their workers or furnished small portable houses, which were sometimes crowded and in bad repair; from three to ten persons in many of the beet-field families were obliged to sleep in one small room. Occasionally a shack of tar paper or tin, or a caravan wagon, was the only shelter provided. One child told the Children's Bureau agent that the family had to take turns going in, as there was not room for all of them at once.

INFANT MORTALITY AND EMPLOYED MOTHERS

New evidence bearing on the influence of the industrial employment of mothers on infant mortality will soon be published by the Department of Labor. The evidence, which relates to births in Baltimore, indicates that the mother's employment away from home either preceding confinement or during the infant's first year of life is detrimental to the child's health. The employment of mothers during pregnancy is associated with a high stillbirth rate, a high premature birth rate and a high mortality rate during the first month of life. The stillbirth rate among mothers who were employed in industrial pursuits during the year preceding confinement was more than twice as high as that among mothers who were not so employed. Of the live births to mothers employed, 6.2 per cent. were premature, as compared with 5.7 per cent. to mothers not employed. The mortality rate during the first month of life was 77.3 for each thousand among babies of mothers employed or nearly twice the rate, 39.9, among babies of mothers not employed.

That the employment of a mother, if continued until a short time prior to the confinement, is especially harmful is confirmed by this new evidence. Nearly 40 per cent. of mothers employed away from home worked until within two months, and 25 per cent. until within two weeks, of confinement. The employment of mothers too soon after confinement also appears to be a factor in the infant mortality rate. The mortality rate among babies included in this study whose mothers were employed away from home during the babies' first year of life was one and one-half times the rate among babies of mothers not employed.

Breast feeding is denied the baby whose mother works away from home. A much larger proportion of infants of mothers employed away from home were artificially fed than of those whose mothers did not work. That artificial feeding has serious consequences is apparent. The mortality among artificially fed babies averages between three and four times that among breast-fed babies.

That the small earnings of the father are chiefly responsible for the employment of the mother is shown by the contrast between the several income groups in respect to the proportion of mothers employed. Of mothers in families in which the fathers earned less than $450, 29.2 per cent. were gainfully employed away from home during pregnancy, while 1.2 per cent. of the mothers in families in which the fathers' earnings were $1,250 or over were employed at that period. The contrast is equally striking in the case of employment following confinement. Of the mothers in homes in which the fathers' earnings were less than $450, 22.1 per cent. were gainfully employed away from home during the infant's first year of life, as compared with only 0.6 per cent. of the mothers in homes in which the fathers' earnings were $1,250 or over.

Previous reports of the Children's Bureau on infant mortality have shown a definite connection between income and infant mortality. As the income increases, the infant death rate decreases. This Baltimore study, based on a larger group than the previous studies, permits a closer analysis of the single factor of employment of mothers. The importance of this factor may be realized from the fact that even within the same income groups the mortality rate is higher for babies whose mothers are employed outside the home.

Book Notices

PHYSICAL DIAGNOSIS. By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the University of Arkansas. Third edition. Cloth. Price, $8.50. Pp. 755, with 319 illustrations. St. Louis: C. V. Mosby Company, 1922.

This edition, well indexed, considerably enlarged, partly rewritten, and containing a chapter on the cardiac arrhythmias by Dr. Drew Luten of Washington University School of Medicine, is designed for the medical student and the busy practitioner. The chapters devoted to the physical diagnosis of the chest seem adequate from the standpoint of the medical student; those dealing with the cardiovascular system and the abdomen are less adequate, while those concerned with blood pressure, electrocardiography, the roentgen ray, and examination of the nervous system are sketchy and of doubtful value. Following the usual custom, the author has introduced the principal "systems" by chapters on clinical anatomy. These consist largely of information gleaned in the mortuary, appropriate in regard to the chest, but entirely inadequate in the case of the abdominal viscera and particularly of the gastro-intestinal tract. As in other textbooks on physical diagnosis, the advance in our knowledge of relations and normal variations of the abdominal viscera in living subjects furnished by the roentgen ray and by surgery has been largely disregarded. The modern textbook should substitute for old diagrams of the hollow viscera made from the dead the knowledge obtained from the study of the living. For example, the student should be taught that there are normal and individual variations in the shape, size and position of such organs as the stomach. It would seem, also, that a work would be of more value to the student if, instead of attempting to cover the whole field of physical diagnosis in the broadest sense, it limited the subject matter to the actual phenomena that may be observed in health and in disease, with detailed description of the means of eliciting signs, their probable mode of production, their significance and their relation to symptoms. This, after all, is what the author attempts to do. Inclusion of chapters on the roentgen ray and electrocardiography, subjects that require special and separate consideration, serve to emphasize the inadequate presentation of the chapters mentioned. A textbook of which three editions have appeared in five years, particularly one placed largely in the hands of medical students, deserves careful scrutiny from the standpoint of medical education. Viewed from this standpoint, the book does not meet the requirements of the ideal textbook on physical diagnosis.

THE PHYSIOLOGY OF REPRODUCTION. By Francis H. A. Marshall, Sc.D., D.Sc., F.R.S., Reader in Agricultural Physiology in the University of Cambridge. With Contributions by William Cramer, Ph.D., D.Sc., M.R.C.S., James Lochhead, O.B.E., M.A., M.D., and Cresswell Shearer, M.D., Sc.D., F.R.S. Second edition. Cloth. Price, $12 net. Pp. 770, with 187 illustrations. New York: Longmans, Green & Co., 1922.

The first edition of this work has been out of print for some time. In the present edition all departments have been brought up to date by the addition of new material, particularly new research on the generative organs. The work is almost encyclopedic on the subject it covers. The physiology of breeding in every type of life is described. Special chapters are devoted to the changes of the reproductive organs and to the process of reproduction. Two valuable new chapters concern the biochemistry of the sexual organs, and "the testicle and ovary as organs of internal secretion." In the latter chapter the newer attempts to show whether or not these glands have an internal secretion and the various extirpation, ligation and roentgen-ray methods are given special consideration. The author seems to be particularly impressed with the rejuvenation experiments of Professor Steinach. The chapter on fetal nutrition has been little changed from the previous edition, since the authors believe that few new contributions have been made on this subject. Nevertheless, some excellent work done in this country has been overlooked by the English writers, especially that done at Yale University under the supervision of Dr. Slemons.

Among other chapters of great interest are those on lactation, fertility and the factors that determine sex. After a complete consideration of the literature, the authors conclude that sex is not determined by the same factors in all cases, and that it is not determined at the same period of development but may be called into being at a later stage of life; in fact, they state that there is evidence of a change in the metabolism even in comparatively late life which may initiate changes in the direction of the opposite sex or even bring about a complete sex reversal.

I BELIEVE IN GOD AND IN EVOLUTION. By William W. Keen, M.D., Emeritus Professor of Surgery, Jefferson Medical College. Cloth. Price, $1. Pp. 100. Philadelphia: J. B. Lippincott Company, 1922.

Dr. Keen, who is now over 87 years of age and who years ago retired from active practice, seems to be as active now as are many men in their prime. And his activities are all altruistic—for the benefit of his fellows, morally and spiritually, and in defense and praise of that profession to which he devoted his life. The present book is an illustration. It is an elaboration of the commencement address which he delivered before the Crozer Theological Seminary last June; and presumably is a reply to the small group of propagandists against evolution, led by W. J. Bryan. Dr. Keen's main points are the analogy of the anatomy and physiology of man to other animals, the rudimentary organs—as, for instance, the appendix and embryonic deformities. The facts presented here will not convince W. J. Bryan and his followers—nothing will—but they make interesting reading. However, while it may not accomplish the purpose for which it was written, Dr. Keen, apparently without knowing it, has given us a book that, with a little deletion of irrelevant matter, would make a splendid bit of literature to use as evidence of the practical value and righteousness of animal experimentation.

LES PHÉNOMÈNES DE DESTRUCTION CELLULAIRE: AUTOLYSE—HÉMOLYSE—BACTÉRIOLYSE—ORGANOLYSE—L'IMPORTANCE DE LEUR RÔLE EN PATHOLOGIE. Par Louis Bory, Chef de Clinique à la Faculté de Médecine de Paris. Préface de M. le Prof. G.-H. Roger. Paper. Price, 12 francs net. Pp. 211. Paris: Masson et Cie, 1922.

This is an attempt to correlate numerous lytic phenomena as divergent and unrelated as postmortem autolysis, hemolysis by chemical agents, and bacteriolysis of the d'Herelle type. As these processes have in common only the disintegration of complex protein structures, brought about by measures that are extremely dissimilar, the result of the attempted correlation is not convincing and does not seem to lead to any particular goal. The author, apparently, is unfamiliar with most of the modern work on the topics under discussion, for among the numerous references cited are virtually none that are less than ten years of age. To discuss autolysis at length without taking into consideration the fundamental influence of H-ion concentration is not profitable. Since most of the references are of the period of 1907 to 1912, except for a brief reference to the bacteriophage, and the discussion is based on the knowledge of that date, the suspicion is aroused that this publication has been lying dormant for about ten years, and then published without modernization.

ABNORMAL BEHAVIOR. Pitfalls of Our Minds. An Introduction to the Study of Abnormal and Anti-Social Behavior. By Irving J. Sands, M.D., Instructor in Neurology, Columbia University Medical School, and Phyllis Blanchard, Ph.D., Psychologist, Monmouth County Mental Hygiene Clinic. Cloth. Price, $4. Pp. 482. New York: Moffat, Yard & Co., 1923.

This volume contains the results of the authors' study of cases observed in the psychiatric service in Bellevue Hospital. These cases were usually conduct disorders showing various forms of abnormal behavior, resulting from social maladjustment and in many instances terminating in delinquency or insanity. In the course of the book, 137 cases are reported in literary style, technical terms being avoided as much as possible. The book is especially adapted to social workers, probation officers, parents and teachers rather than to the technical psychiatrist. It is not, however, adapted for the general reader, since comprehension will require more than ordinary knowledge of modern psychiatry and abnormal psychology. Throughout the discussion the authors show an excellent balance and good judgment as to that which is proved in psychanalysis, physiology and pathology. They wisely reject much of the advanced interpretation that does not rest on any solid basis of proved fact.

THE GOLD-HEADED CANE. [By William Macmichael, M.D.] New edition with introduction and annotations by George C. Peachey. Cloth. Price, $4.50. Pp. 195, with illustrations. London: Henry Kimpton, 1923.

Four editions of the "Gold Headed Cane" have appeared previous to the one here reviewed, the first in 1827 and the second in 1828; the third edition, published in 1884, was edited by William Munk and supplied with notes, and continued the narrative up to the year 1858; in 1915 an edition was issued with an introduction by Sir William Osler and the preface by F. R. Packard, and this edition was reprinted in 1920. The present edition is printed as a quarto on large sheets with wide margins. It is edited and has an introduction by George C. Peachey, who has also provided notes concerning some of the other characters mentioned in the book. The "Gold Headed Cane" is one of the classics of English medical history. Readers will no doubt remember that the cane is assumed to have passed through the hands of Radcliffe, Mead, Askew, the Pitcairns and Baillie, and the story it tells is interspersed with anecdotes of the lives of these great physicians. The book merits the excellent format of this new edition.

DIE INDICANÄMIE: IHRE BEDEUTUNG ALS NIERENFUNKTIONSPROBE. Von Dr. Gustav Baar. Paper. Price, 750 marks. Pp. 148. Berlin: Urban & Schwarzenberg, 1922.

This is a supplementary study to "Die Indicanurie," published in 1912, and represents Baar's investigations to test the truth of the assertions of Haas and of Rosenberg that an increased indican content of the blood is of special value in the diagnosis of renal insufficiency. Haas had stated that a blood indican value of 0.16 mg. for each hundred cubic centimeters was indicative of renal insufficiency, while Rosenberg showed that certain gastro-intestinal disorders as well as many cases of cardiac incompetence were associated with values of 0.16 mg. per cent. and over. The method used in this study was the quantitative one of Jolles, in which the blood protein is precipitated by addition of 20 per cent. trichloracetic acid and the filtrate treated with 5 per cent. alcoholic thymol solution and concentrated hydrochloric acid containing 5 per cent. of ferric chlorid. The violet colored mixture is then extracted with chloroform and compared colorimetrically with similarly treated standard solutions of pure indican. As is well known, indicanuria is a frequent finding in intestinal and septic conditions as well as in true "metabolic" states in which an increased nitrogen decomposition occurs. However, Baar's results seem to indicate that indicanuria and indicanemia do not necessarily run parallel, and that absorption of excessive indican from the bowel, as indicated by an indicanuria, causes no increase of the blood indican in cases in which the kidney is normal. In 37.5 per cent. of his cases of gastro-intestinal diseases an increase in the blood indican was noted without any evidence being present of renal insufficiency, but he does not believe this finding due either to increased intestinal decomposition or to an increased urea retention. His work seems to show that the value of the nitrogen determinations of the blood is far less than that of the blood indican, since excessive blood indican values are typical for a renal insufficiency (with the exceptions mentioned by Rosenberg), while the nitrogen values, even in irreparable renal insufficiency, may at times be within normal limits and at times far above normal. Baar reports cases in which there was no increased blood nitrogen, but increased blood and urine indican and, on the other hand, a group of cases without increased blood nitrogen or blood indican but with markedly increased urine indican. A further group, associated with renal insufficiency, showed marked increase in blood nitrogen and indican but very little urine indican. From these results, Baar draws the conclusion that the indicanemia in nephritis is not dependent on the increased nitrogen values of the blood or on increased indican formation in and absorption from the bowel but, rather, depends on retention of indican as a result of renal insufficiency. In acute nephritis, while the blood nitrogen values may be increased and may later rise or fall, the blood indican seems

to show a persistent increase, although cases may be found in which neither nitrogen nor indican are increased. In chronic nephritis, the blood indican is constantly increased if the nitrogen values are increased, yet one cannot assume that the blood indican will sink if the nitrogen values sink, as he often finds an increase of indican in spite of decrease of nitrogen. His figures show that in uremia and chronic nephritis, as well as in severe anemias in which we have a "metabolic indicanemia," the blood indican values were virtually never under 0.16 mg. for each hundred cubic centimeters of blood. In uremia the urine indican is almost always under 1 mg., the normal value being 0.65 mg., that is, very little of the blood indican is excreted by the urine. Unless there is a renal insufficiency, the urinary indican runs parallel to the indican of the blood. These results of Baar are certainly significant, and seem to prove conclusively that figures of 0.16 mg. of indican for each hundred cubic centimeters of blood speak for a renal insufficiency in the absence of gastro-intestinal disorders and of certain cases of cardiac incompetence.

THE ART OF ANAESTHESIA. By Paluel J. Flagg, M.D., Lecturer in Anaesthesia, College of Physicians and Surgeons, New York. Third edition. Cloth. Price, $4.50. Pp. 371, with 136 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This edition contains an additional chapter on selection of the anesthetic and the method of administration, and a brief discussion of synergistic anesthesia and status lymphaticus. As in the previous editions, the author has succeeded in providing a manual that may be studied with profit by student and anesthetist. The individual experience of the specialist in anesthesia will doubtless lead to divergent opinions, particularly as to the safety and efficacy of the open method of anesthesia. The author's objections to this method are not well founded, as can be demonstrated whenever the method is properly used. Why draw conclusions from the results seen in a clinic in which lay anesthetists improperly employ the method? The dangerous practice of touching the cornea to determine the degree of anesthesia is certainly open to criticism. The chapter on the point of view of the patient should be read by every surgeon and anesthetist. There is a good index, and the illustrations are ample.

PNEUMOCOQUES ET AFFECTIONS PNEUMOCOCCIQUES. Par L. Cotoni, C. Truche et Mlle. A. Raphael. Paper. Pp. 224, with 4 illustrations. Paris: Masson et Cie, 1922.

In the first part the history and characteristics, morphologic, cultural and immunologic, of the pneumococci are discussed. In the historical part the independent discovery in 1881 of the pneumococcus in the sputum by Sternberg, later surgeon-general of the U. S. Army, is not mentioned. The remarkable antiopsonic substance in virulent pneumococci (Rosenow's "virulin," the "antiphagin" of Russian investigators) also seems to have escaped mention. Part 2 deals with the habitat of the pneumococci and the pneumococcal infections. Here again is noted a failure to consider certain American contributions. Part 3 is devoted to the treatment of pneumonia, but sufficient evidence is not presented to justify any conclusion that in practice this treatment is of decisive value. To students of the pneumococci, this book will be of interest in that it presents the subject from the French point of view, and as such contains much that is of great value.

RICKETS. A Study of Economic Conditions and Their Effects on the Health of the Nation, in Two Parts Combined in One Volume. By J. Lawson Dick, M.D., F.R.C.S., Deputy Commissioner of Medical Services, London Region. Cloth. Price, $5.50. Pp. 488, with illustrations. New York: E. B. Treat & Co., 1922.

This deals especially with the etiology of rickets; much space is devoted to the geographic distribution of the disease and the explanations for its confinement to the industrial districts of northern Central Europe and the United States. The extensive recent work done in America by Howland, Park, MacCallum and others on the etiology and treatment is not touched on. The chapters on the literature of rickets dealing with Glisson and his times, and on ancient medicine and rickets, will be of some interest to the medical historian. The economic aspects of the disease are dealt with in considerable detail.

Medicolegal

Revenue Law Regulation of Prescribing Narcotics—Conspiracy of Physician and Druggist

(Smith et al. v. United States (U. S.), 284 Fed. R. 673)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of a physician and a druggist for conspiring to violate Section 2 of the Harrison Narcotic Law as amended, says that it was argued that the Harrison act is a purely revenue measure; that, so treated, it does not forbid prescriptions for narcotics by physicians given with no intention of medical treatment but to satisfy drug cravings of addicts, and does not forbid druggists filling such prescriptions, with full knowledge of their character. The Harrison act is a revenue measure. However, Congress had the power to enact all requirements in connection with that, or any other act, which it deemed advisable, for the purpose of enforcing and making the law effective; and such power is limited only by the restriction that requirements are reasonably related to its apparent purpose. Considering the character of the traffic and the difficulty of enforcing this revenue act, this court thinks that the requirement that physicians should prescribe bona fide in the course of professional treatment in order to bring them within the exception in the statute is reasonable and germane to the revenue purpose. This is equally true of a sale by a druggist with knowledge that the purchaser is seeking the drug on a bogus prescription.

In the instructions given to the jury, they were told, among other things, that this case came under the federal statute which provides that it shall be unlawful for two or more persons to combine, confederate or agree to commit an offense against the United States. It does not require any formal action on the part of the parties to set it in motion. It is sufficient if, in a given case, as charged, there is a common understanding, tacit or otherwise, so that the parties understand among themselves that they are going to do the forbidden thing, that one or both of them is to do some act, or the acts, which are essential to bring it to a successful conclusion. Here there was evidence that a government agent went with another man, through some arrangement made by the latter, to the office of the defendant physician to get some prescriptions, 100 in all; but only 35 were ready; and when other persons came in and asked for prescriptions for drugs, they were handed some of those that were already prepared, and their place was supplied by writing others until 100 were written. And, on request, the physician called the druggist on the telephone and notified him that the agent was coming over with these prescriptions.

Now, the circuit court of appeals holds, a conspiracy must usually be established by evidence of different actions by the separate conspirators showing knowledge of and execution of the conspiracy. Here it was entirely proper to show what either the physician or the druggist did in connection with the transaction, for the purpose of establishing a conspiracy. These acts fitted together perfectly, forming a mosaic which showed the conspiracy in outline and detail. The large number of such prescriptions given by the physician and filled by the druggist; the acquaintance between them; the unhesitating act of the physician in giving the agent a large number of prescriptions and of the druggist in filling them without even looking at them; the telephone conversation, and the anxiety of the druggist for the purchaser's safety and the method of delivery at the garage all showed clearly a concerted plan of action. These were enough of themselves to prove the conspiracy and the fact that it was in existence and operation before the agent went to the physician's office for the prescriptions.

The court does not find error in an instruction a part of which was that it is no enticement to ask a physician to write an illegal prescription, if you suspect that he might do it, and you want to find out whether he does it; nor to ask a druggist to sell narcotics illicitly, because both of them know better, and if they are going to obey the law they will not fail to do so in response to any form of petition or

inducement, and it is perfectly within the rights of investigating officers to determine, by such means as were here disclosed, whether a party, or parties, are engaged in violation of the law, and, if they are, to take steps accordingly.

Physician Held Liable for Leaving Drainage Tube in Wound

(Chesley v. Durant (Mass.), 137 N. E. R. 301)

The Supreme Judicial Court of Massachusetts says that, July 29, the defendant operated on the plaintiff for appendicitis; and, August 4, symptoms of sepsis having appeared, he inserted in the wound, for the purpose of drainage, a piece of rubber tubing about 2½ inches long and one-eighth inch in diameter. Until August 13, he dressed the wound and inserted a new tube each day. On the 15th he went on a vacation, leaving the patient in the care of another physician, whose first dressing was applied the 16th. The latter physician continued as the one in charge until the patient left the hospital, and thereafter at her residence up to September 6, when the wound appeared to be clean and healed. In his treatment, he did not insert a drainage tube, and the jury could find on the plaintiff's evidence that after leaving the hospital she improved rapidly and gained in strength, until the following September, when her health began to decline, and she experienced much tenderness, with a sensation of circulation in the wound, which in November opened, and something protruded from it. A nurse who was called pulled from the wound a tube covered with blood, about 2½ inches in length.

The defendant last dressed the wound on August 14, and the evidence was conflicting as to whether he then removed the old tube and inserted a new one. The jury could disbelieve the statements of the defendant and the other physician that the old tube had been withdrawn, and of the defendant that it was not replaced by a new one, and accept the plaintiff's statement that whenever a tube was inserted she had a feeling or suspicion that it was being done, and that at the defendant's last dressing she had no such sensation. They also had before them the plaintiff's evidence that when she told the defendant that the tube had been found and extracted, he did not deny her statement that he had not inserted a tube at his last visit, as well as the testimony of the other physician that at that time no tube was inserted, because the drainage had substantially ceased.

The outstanding fact on the record was that after the wound apparently had fully healed and after pronounced symptoms of irritation and inflammation became manifest, the wound reopened and a tube of the kind admittedly used by the defendant was discharged. A finding was warranted that this abnormal and dangerous condition arose from the defendant's treatment while he was in attendance and before he placed the plaintiff, during his absence and with her consent, in the care of the other physician, who in a similar action tried with the present suit was exonerated by the jury. The defendant was required to use such reasonable skill and diligence as members of his profession commonly possess and exercise under corresponding conditions, and it was for the jury to say, under appropriate instructions, whether under all the circumstances his conduct came up to the required standard.

The jury returned a verdict in favor of the plaintiff for $1,500, and the defendant brought exceptions, which are overruled. His motion for a directed verdict, and his request for an instruction that there was no evidence to warrant the jury in finding that there was any negligence on his part, were rightly denied. His request for an instruction that there was no evidence to warrant a finding that the plaintiff's nervous and other trouble after the tube was removed, and the wound healed up, was in any way caused by the leaving of the drainage tube in the plaintiff's wound while she was at the hospital; and his request for an instruction that there was no evidence to warrant the jury in finding that the plaintiff was incapacitated for work at any time later than two weeks following the removal of the tube, November 7, which in substance asked that the jury be instructed to disregard the plaintiff's testimony of her physical suffering, which the jury could find in character and duration was caused by the defendant's negligence, could not have been given.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
American Congress on Internal Medicine, Philadelphia, April 2-7. Dr. Frank Smithies, 1002 North Dearborn Street, Chicago, Secretary.
American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Thirty-Third Annual Meeting, held at Ann Arbor, Mich., March 2 and 3, 1923

The President, DR. CHARLES P. EMERSON, Indianapolis, in the Chair

Problems of the Two Year Medical Schools

DR. HARLEY E. FRENCH, Dean, University of North Dakota School of Medicine: These problems or difficulties may be grouped thus: 1. The difficulty in securing and holding qualified teachers. 2. The possible difficulty in securing adequate clinical facilities to satisfy the best interests or the demands of our curriculum committee. 3. The transfer of men to clinical schools. 4. What to do in the face of the recommendation of the Council on Medical Education and Hospitals that four year courses be established in all states where adequate finances can be obtained. For a time no difficulty was experienced in transferring students to clinical schools. Today the reduced number of schools plus the limited possibilities for clinical instruction place the two year schools in a precarious position. Most of the two year schools should be encouraged to go on in their present lines if their work measures up to reasonable standards. The building of university hospitals and the location of certain state institutions with reference to these medical schools should be encouraged by both the authorities of these schools and the leaders of medical education. This should be done

for many reasons, but not with the idea that these schools will necessarily be enabled thereby to establish four year courses.

DISCUSSION

DR. C. R. BARDEEN, University of Wisconsin: The two year schools perform a good service. It is important for the two year school to keep in touch with clinical medicine, and it is probably more important for the two year school to have men with medical training in charge of the laboratories. The two year school, if it keeps in touch with the practice of medicine, can perform a very good service.

DR. C. P. LOMMEN, University of South Dakota: In South Dakota it will probably take a great many years before we can provide anything like adequate clinical instruction. Some scheme should be developed for taking care of the product of the two year schools. The problem of placing our students is a difficult one.

DR. W. S. LEATHER, University of Mississippi: We have formed an affiliation with the four year medical schools of the different universities so that we have had very little trouble in placing our students.

DR. WILLIAM DARRACH, Columbia University: The two year schools are doing splendid work. We have taken a great many students of advanced standing from the two year schools. With the increased numbers of students seeking to enter medical schools, we have been driven to limit our classes. This limitation demands a careful selection of students.

DR. WALTER L. NILES, Cornell University: Ultimately the number of two year students will increase to the extent we expect in other years, which will provide for a considerable number of desirable students from the two year schools. Our experience has been that the work of the students from the two year schools has been very satisfactory.

Four Years in Medicine: The Hospital Medical School

DR. THOMAS ORDWAY, Dean, Albany Medical College: We should recognize that, just as there are two general types of colleges of arts and science, there may also be two types of medical schools. One type might be termed the medical university, and consist of a group of departments or institutes and the more or less special schools of public health, tropical medicine, industrial medicine, etc. In this medical university, the undergraduate departments would be but a small part of its manifold activities. Such medical universities should be particularly important, and are very necessary for the training of real specialists in medicine and its allied branches. The hospitals associated with such a school would be specialized clinical institutes. In such a large medical university, the relations between departments or institutes would naturally be somewhat formal because of its size and the distribution of its buildings. The second type of medical school should also be the medical department of a university, for only university relationship can give the educational requirements and stabilizing influence necessary. This form of school might be termed the hospital medical school. It should be a school with small classes (from twenty to thirty students in each), housed in a large general hospital. It would have the advantage of intimate relation between student and teacher and, the departments being essentially under one roof, should facilitate interdepartmental cooperation, not only between the clinical branches but also between the clinical and laboratory departments. The teachers of the specialties should confine their work almost entirely as consultants and also to emphasize and correlate their specialty. Elective courses and special problem assignments should be arranged. Representatives of the departments, preferably the heads, should have definite office or consultation hours. The advantages of cooperation are immediately apparent in the better diagnosis and treatment of the patient, and such interchange of criticism and knowledge is stimulating and helpful in keeping the various departments in touch with advancing knowledge. It tends also to have a stabilizing influence, for it prevents isolation and the tendency to the development of special fads. It facilitates our search for the truth.

DISCUSSION

DR. G. CANBY ROBINSON, Vanderbilt University: The cooperation of the various departments of the medical school must be one of the advances we must all attempt to accomplish in the future. The distinction between what the author calls a medical university and a hospital medical school is a very good one. The ideal of bringing the school as a whole into a unified one is an ideal that we must all strive for.

DR. A. C. ABBOTT, University of Pennsylvania: We are now ready for some one to wipe the slate clean, as it were, and start a more logical medical curriculum, so that students will have more time to think and to work independently, and not try to cover the whole field of medicine.

DR. HUGH CABOT, University of Michigan: We are making a plea for getting away from the water-tight compartment system. If each one is teaching his subject every day, without any relation to anything else, it is in a sense a return to the conditions that existed before the concentration of the fundamental subjects. That this concentration was a great step forward, I do not believe any one doubts. I do not believe medical education would be where it is today if that concentration had not been made. I am satisfied it has served the greatest usefulness, and we must spend much time in bringing together again those things which we somewhat violently separated.

DR. E. P. LYON, University of Minnesota: The physical contiguity of the plan is a big factor, and very much can be gained if the preclinical teachers and the clinical teachers can come together frequently. Mr. Pritchett has not offered a solution of the problem. As a laboratory man I shall cooperate in every effort to get a curriculum that works up from an objective point, and particularly one that tends to make the student think—give the student independence.

DR. J. PARSONS SCHAEFFER, Jefferson Medical College: Something should be done to bring freshmen in contact with patients which will help teach anatomy. If a certain amount of anatomy and physiology could be taught in the fourth year, it would be a great help, and if a correlation course could be arranged whereby the student can study patients and think in terms of anatomy, biology, chemistry and physics, internal medicine and surgery, it would be a great advance for the whole fabric of present day medicine.

DR. RAY LYMAN WILBUR, Stanford University: There are knotty places in the medical curriculum that should be blown up. While I believe in a slow process, we have to go faster to get results. We know what ought to be done and should strive toward that end. We have to deal with this problem differently in different institutions. We have varying personalities to deal with; but, when certain fundamentals are agreed on, we should go to work and do the best we can with them.

Shall a Fifth or Intern Year Be Required for the M.D. Degree and for Admission to the Licensing Examination?

DR. WILLIAM DICK CUTTER, Secretary, State Board of Medical Examiners of New York: Shall the medical course be extended to five years? The two years' premedical work represents part of the training of the student for his profession; hence the course is really one of six years, and if we add another year it would be seven years. Is it necessary to add another year to the length of the period which is required for the training of men before entering on their life work? The time we now have at our disposal (six years) is not fully utilized; hence there is not any necessity for extending the course. Our department has compiled statistics showing that the length of the teaching period diminishes progressively from the elementary schools up to the colleges and universities. Is there any reason why, if a child of 8 can study for forty-two weeks, a young man of 21 cannot study for thirty-four weeks? If we take out all time given to vacations, holidays, Sundays and half a day on Saturday, we can lengthen the period of instruction, and that we should do before we undertake to add another year to the course. By increasing the amount of study in the premedical year and increasing the length of the college year in a professional school, eight weeks' more time can be secured without the

addition of another eight months according to our present schedule. The other question is whether or not an internship in a hospital should be made a part of the legal requirement for admission to the licensing examination or be required as a prerequisite by the university for its degree. If a medical school is so located that it has a hospital under its control of sufficient size and capacity to provide internships for all its students, they might carry on practical work under the direct supervision of the members of the faculty of the medical school or university, and there would be very little objection to such a procedure; but I know of no medical school so located that it can give to all its students internships in its own hospital. The result is that those schools which have adopted this plan are those states which send students into hospitals scattered all over the country where they serve one year or more as interns. During that time, they are a part of the machinery of the hospital. Their duties are largely routine. Instruction is secondary, and, in many such hospitals, facilities for instruction are inadequate. The state of New York will not require the lengthening of the present medical course from six years to seven years until it is shown that the time already available has been fully utilized. Again, New York will not require the placing of students in all sorts of hospitals until the medical schools have found some way to give adequate training under their own supervision and control.

DISCUSSION

DR. ARTHUR T. MCCORMACK, State Board of Health of Kentucky: Regardless of any campaign on the part of state boards, many more men will become interns in the future than in the past because the character of the training is more basic, and the art of medicine makes it necessary for students to go into hospitals, and a man, after he has been educated in our modern institutions, realizes that he must learn a good deal of the art of medicine after he has finished his course. In order to become a successful practitioner, he must associate himself with the artisans in medicine. For that reason, while some of the teaching in a hospital cannot be quite as effective, I believe that his contact with his fellows practicing the art of medicine is a very important thing to him.

DR. JOHN S. RODMAN, National Board of Medical Examiners: The National Board of Medical Examiners started seven years ago assuming that a hospital year was an essential part of the training of the medical student, and I think our experience up to this time has led us to feel that we shall continue that practice.

DR. C. A. HAMMAN, Western Reserve University: The hospital year is necessary, but hospitals should be suitable for intern instruction. I am heartily in favor of an intern year. If the rest of the course can be shortened, it should be done. Time should be utilized to better advantage. It may be said that interns are not under the supervision of competent teachers at all times. That is true in many cases, but they are given an opportunity to learn, and that is of great value.

The Place of Anatomy in the Medical Curriculum

DR. WILLIAM KEILLER, Acting Dean, University of Texas Department of Medicine: To fix anatomy in the student's mind, he must grow up in an anatomic atmosphere. His anatomic pictures must be impressed on his brain again and again till they have some permanence. To attain this end, I would distribute his ordinary dissection into two hour periods throughout his freshman and sophomore years. I would revivify his freshman-sophomore impressions by a laboratory course of applied anatomy in his junior year, when he is beginning to be appreciative of the clinical side of things. Applied anatomy is in most schools an elective lecture course. As a lecture course, it is very dry at best. As a laboratory course, applied anatomy is intensely interesting, and affords a great opportunity for manual training and for impressing the student with the appeal of accurate anatomy to clinical problems. Twenty years ago, the main study of nervous diseases was symptomatic only; today, nine tenths of ordinary nervous diseases are most interesting problems in applied anatomy and physiology.

DISCUSSION

DR. H. VON W. SCHULTE, Creighton Medical College: I do not feel like asking for more time in teaching anatomy, as the present curriculum will not warrant it. Anatomy might be carried over into the clinical field by clinicians who know anatomy. Then 90 per cent. of the difficulty of teaching anatomy would disappear. Students should be taught to apply their anatomy in clinical work.

DR. W. F. R. PHILLIPS, University of South Carolina: A fault I have observed is not in the anatomic department; it is the fact that the clinician and the surgeon do not use their knowledge of anatomy. What we need are men who are good anatomists, who keep up with anatomy, and who think in terms of anatomy when they teach other branches. If they will do that, there will be no need of asking for more time in which to teach anatomy.

DR. ALEXANDER S. BEGG, Boston University: We are getting at the problem in a different way. We have a rule that every young surgeon on our hospital staff must serve two years in the dissecting room. They are very keen to do it. We have more applications for positions than we have positions to fill. It is a question of cooperation between the departments. I attend all staff meetings, and make anatomic demonstrations as far as the clinicians will allow me.

DR. C. R. BARDEEN, University of Wisconsin: A student can learn anatomy if he is skilful with his hands and understands the necessity of making clean dissections. Heretofore, it was a mistaken idea in teaching anatomy to students that it meant memorizing words, whereas the most important thing in anatomy is to teach students to think in terms of structure, and one of the best ways to do that is by the kind of training referred to by Dr. Keiller, whereby the student is encouraged to visualize the thoracic and abdominal viscera, making drawings of them and comparing them with what he sees when the abdominal wall is opened, and so on.

DR. THOMAS ORDWAY, Albany Medical College: More coordination between the work of the anatomist and that of the pathologist could very well be undertaken. At necropsies there is no reason why the anatomist and pathologist with members of the class should not be present. In our experience this has proved valuable to the anatomist.

DR. G. CARL HUBER, University of Michigan: The modern anatomist thinks in terms of microscopic anatomy, in terms of embryologic and functional anatomy, in terms of nervous anatomy, as well as gross anatomy. Twenty-five years ago we did practically no work in histology, no work in embryology, and very little work in neurology. Fundamental work in anatomy should be taught by men who are interested in the work.

DR. J. PARSONS SCHAEFFER, Jefferson Medical College: Embryology should be taught in the first year, if physiology is taught early in the second year. It would be much better if we could correlate structure and function. When the student has reached clinical work, he sees the importance of that correlation. A third year course in practical anatomy is a very good thing. I would urge that anatomy be taught not only in the first year but also in all years, to the clinicians.

The Moral Qualifications of the Medical Student

DR. CHARLES P. EMERSON, Indiana University: The real product of the medical school is the general practitioner. He is and must be the corner stone of the medical profession. Just as soon as specialists individually, or as officers of a national society, offer their services direct to the public, and just as soon as the public learns to appeal to the specialist directly for help, thus ignoring the general practitioner, the medical situation becomes unfortunate. We of the schools pay too much attention to the specialists. The family doctor —that is our job. We should do everything in our power to qualify him to win the confidence of the public and not feel that every public health official, specialist and public health society is his rival and enemy, and that his professional salvation will depend on his ability to escape from general practice into one of the specialties. The important thing needed now is to teach the medical student not alone the medicine and surgery of the twentieth century but also the

accompanying responsibilities. The weakness of our graduates of today is that they have the professional power of the twentieth century but the more convenient ethics of the mid-nineteenth, and the result is disastrous. We should early convince our students of the sacrificial character of their calling. We should encourage the development of strong Y. M. C. A.'s and similar societies in the school. The faculty should attend these meetings and show a strong religious background in all of our own practice.

The Special Medical Student

DR. JOHN T. MCCLINTOCK, University of Iowa: The term "special student" directs attention to the fact that this is an exception to the ordinary procedure in the registration of the student. One group of such students has wandered from one institution to another, but finally finding a berth somewhere under the head of "special" students, with the proviso that the conditions of entrance requirement shall be removed before they enter on the second year, and sometimes that five years shall be spent in the school instead of four. Is not that a direct evasion of the rule not permitting any entrance condition? Does the proviso of the additional fifth year make up for the entrance condition? A second group comes in a different way. There has been created a demand for bacteriologists, serologists, physiologic chemists, and so on. These persons find it to their advantage to take some medical work in the preparation for their special field of activity. They apply for admission to a college of medicine to take some of these courses. In medical colleges associated closely with general universities, these persons can be admitted by having registered in some college in the university; and, by making preparations with the department of clinical medicine, they can be handled satisfactorily. Other medical colleges not associated directly with a university admit these applicants as special students. A real question arises later. That student, after completing certain subjects of the medical course, wishes to go on and take the M.D. degree. What credit is to be allowed him for the work which he took in the college of medicine when he seeks registration as a regular medical student? Supposing we grant full credit to him, what is the difficulty? We open the door to the first class of special students. They now apply for admission as regular students, give an explanation where they wish to go, and prepare themselves for some other special line of work connected with medicine. They are admitted to some of the courses. Meanwhile, they have taken up other work and removed their entrance conditions. Now they apply for the full course. That presents a real difficulty, and the solution of the problem must be one which will be just to the college, permitting the college the greatest leeway possible to meet the obligation of all students. It must be one which is just to the individual student and not unjust to the regular student, and it must be one which will not compromise the individual college with any of the other members who have signed up for the same rules and regulations.

The Dean's Problems

DR. IRVING S. CUTTER, University of Nebraska: The personality of the student ought to be known by the dean. I have for many years, at a certain hour of each day, had as many students as possible come to my office to talk over their problems, their successes, their failures, their financial struggles, their social problems—in fact, anything they chose to talk about. This is not done individually. Occasionally a student may want to see me alone regarding a matter of a personal nature, but, as a rule, they are glad to talk before one another because their problems have an interrelation, and they learn from one another as they talk thinks over. In furthering efficient work of administration among the student body, we are neglecting to use some of the means immediately at hand. One of these is the college fraternity. I ask some one of the faculty, not a member of a given fraternity, to visit that fraternity once a month to talk over with these fellows their problems, and these groups are now very keen for that monthly visit of the faculty member. To stimulate scholarship among students, the university record or register publishes annually a statement of the scholarship of each medical fraternity as well as each fraternity group in the university hall, and these fraternities vie with one another as to who shall win honors year after year. Another factor is the graduate student. We have for several years encouraged students at the end of the sophomore year to drop out of the medical course and become graduate students in one of the departments. These graduate students meet with the departments when they have their meetings to talk over their problems. These men live in fraternity houses and they carry back not only the point of view of the students but also the fraternity spirit and the point of view of the staff. This does a lot of good in student examinations, which is one of the big problems of the dean and in the administration of the school. We have a small dormitory, which accommodates fifty or sixty men. There is at present great rivalry in our students' scholarships between dormitory groups and groups living in the several fraternity houses. No matter how efficient the hospital superintendent may be, the university or teaching hospital is one of the dean's important problems.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

January, 1923, **31**, No. 3

*Absorption of Cerebrospinal Fluid Into Venous System. L. H. Weed, Baltimore.—p. 191.

Interstitial Cells of Gonads of Cattle with Especial Reference to Their Embryonic Development and Significance. K. F. Bascom, Chicago.—p. 223.

*Human Types and Growth Reactions. C. R. Stockard, New York.—p. 261.

Pancreatic Ducts and Pancreatic Bladders. J. L. Bremer, Boston.—p. 289.

Mast Leukocytes in Adult Guinea-Pig Under Experimental Conditions. A. R. Ringoen, Minneapolis.—p. 319.

Absorption of Cerebrospinal Fluid Into Venous System.—The pathway of absorption of the cerebrospinal fluid into the blood stream under normal conditions is by way of arachnoid villi into the great dural venous sinuses. Under the influence of an increased salt content of the blood, produced by the intravenous injection of strongly hypertonic solutions, Weed asserts that absorption takes place also by way of the perivascular channels and through the ependymal lining of the cerebral ventricles into the capillary bed of the nervous system. In the normal process, filtration may be the physical factor of greatest importance, but after the intravenous injection of strongly hypertonic solutions, osmosis and diffusion apparently play the only active rôles.

Human Types and Growth Reactions.—This paper is presented by Stockard as an introduction to a series of studies now under way which bear on the origin and development of certain well marked types found among the mammals. It is stated that the growth rate of the individual depends on both internal and external factors—hereditary composition and functional activities—the latter being modified largely by surrounding conditions. The two groups into which almost all ordinary persons fall more or less exactly may be termed the "linear" type and the "lateral" type. The linear type is the faster growing, high metabolizing, thin, but not necessarily tall, group, while the lateral type is slower in maturing and is stocky and rounder in form.

American Journal of Ophthalmology, Chicago

February, 1923, **6**, No. 2

Pulsating Exophthalmos. L. B. Whitham, Baltimore.—p. 81.

Strabismus. E. Landolt, Paris.—p. 93.

Considerations of Ocular Vergence. G. F. Alexander, Scarborough, England.—p. 102.

Graduated Tenotomy of Inferior Oblique Muscle in Correcting Certain Forms of Squint. J. L. McCool, Portland, Oregon.—p. 107.

Heterophoria. L. W. Fox, Philadelphia.—p. 110.

Transfer of Function of Ocular Muscles. E. Jackson, Denver, Colo.—p. 117.

Vision After Cataract Extraction. F. Nicolas, Manila.—p. 123.
Corrected Report of Colonel Smith's Cataract Operations. W. A. Fisher, Chicago.—p. 124.
One Hundred Consecutive Cataract Operations. E. A. Knorr, Baltimore.—p. 126.
Final Result of Carcinoma of Orbit Probably Originating in Lacrimal Gland. C. N. Howard, Warsaw, Indiana.—p. 128.
Gunshot Wound of Orbit, Operation, Recovery. J. A. Morgan, Honolulu, T. H.—p. 129.

American Journal of Public Health, Detroit

February, 1923, **13**, No. 2

Prevention of Simple Goiter. O. P. Kimball, Cleveland.—p. 81.
Maternal Mortality and Mortality in First Month of Life in Relation to Attendant at Birth. J. Levy.—p. 88.
Influence of Epidemiology on Present-Day Methods of Control of Communicable Disease. H. Emerson, New York.—p. 100.
Lima, Ohio, Sewage Disposal Problem. G. W. Fuller, New York.—p. 103.
Heat Resistance of Bacillus Botulinus Spores. J. R. Esty, Detroit.—p. 108.
Law Enforcement in Control of Tuberculosis. E. A. Jonas, Chicago.—p. 113.

American Journal of Syphilis, St. Louis

January, 1923, **7**, No. 1

*Effects of Mercury Inhalation on Animal Organism. J. Gutman, Brooklyn, N. Y.—p. 1.
Syphilitic Genital Chancre. M. B. Parounagian and H. Goodman, New York.—p. 43.
Venereal Disease Clinic. Toledo Municipal Hospital. E. W. Huffer, Toledo.—p. 56.
*Syphilis of Suprarenals. W. H. Deaderick, Hot Springs National Park, Ark.—p. 72.
Syphilis. V. H. H. Hazen, Washington, D. C.—p. 83.
Argyria and Its Relation to Silver Therapy. I. Argyria—Historical. II. Retention and Elimination of Silver with Special Reference to Silver Arsphenamin and Silver Therapy. (To be continued).—C. N. Myers, Brooklyn.—p. 125.
*Mercury Inhalation Therapy of Syphilis. II. Historical Review. J. Gutman, Brooklyn.—p. 145.
*Case of Syphilitic Reinfection. H. Schoenrich, Baltimore.—p. 153.
*Wassermann Reaction in Pregnancy. W. A. Hinton, Boston.—p. 155.
Reactions Following Arsenobenzene Administration and Their Treatment. A. R. Fraser and A. G. B. Duncam, Aberdeen.—p. 160.

Effects of Mercury Inhalation on Animal Organism.—Experiments are presented by Gutman in which the symptomatology and the gross and microscopic pathologic changes in the organs of animals (guinea-pigs and rabbits) subjected to inhalations of mercurial vapors are described. A comparison is made between the effects of mercury when it is administered by inhalation and the effects of oral, hypodermic and inunction methods as described by Kolmer and Lucke. It was found that under like circumstances, the pathologic changes following the administration of mercury, in whatever form and by whatever route, are approximately identical. It was found that the toxic changes following mercurial inhalations consist of marked congestion of many organs, severe destructive processes affecting the intestinal tract and kidneys and lesser injuries to the liver, spleen, suprarenals and nervous system. It is also stated that the effect of mercurial vapors upon the respiratory system depends on their concentration and the manner of their administration. Strenuous inhalations of concentrated vapors induce serious pathologic lesions. Diluted vapors, smaller and less frequent dosage are not productive of harmful effects in the lungs.

Syphilis of Suprarenals.—A case of probable Addison's disease of syphilitic origin is reported by Deaderick. The patient was a woman, aged 40, who had married for the second time eight years previously. The husband admitted syphilitic infection twenty-eight years before with insufficient treatment. She had three miscarriages but no full term labors. Nine years ago she had pains in the liver region followed by marked jaundice, which was very persistent. For the past seven or eight months she has had vomiting attacks preceded by nausea. At first these attacks came on from one to three times a week, then they became more frequent until they occurred after almost every meal. She has lost 15 pounds in weight during this period. For eight months she has been very weak. During some of the "weak spells" she is able to sit up, but frequently she is compelled to lie down, being too weak to sit. She has had dyspnea on exertion for several years. Seven months ago she consulted two throat specialists on account of sore throat and enlargement of the cervical glands. Both diagnosed syphilis and one prescribed antisyphilitic treatment by mouth which she took for two and one-half months causing resolution of the throat and gland trouble. About two months ago she noticed a cloudiness of the right cornea. Her present complaint is pigmentation of the skin, pain in the right hypochondrium and precordium, backache, weakness, vomiting and constipation. The treatment consisted of daily, intramuscular injections of mercury benzoate, up to one-third grain, and of the oral administration of suprarenal gland. After three weeks' treatment all the systemic symptoms were improved but no change could be detected in the cutaneous pigmentation. A month after discharge she reported that the discoloration was fading.

Mercury Inhalation Therapy of Syphilis.—According to the historical evidence presented by Gutman the preponderance of evidence is in favor of claims for the beneficent properties of inhaled mercury vapor. While there is much in the past history of mercury vapor therapy that is unfavorable, he says there is much more which commends the method and places it among other well recognized and lauded therapeutic procedures in the history of medicine.

Syphilitic Reinfection.—Schoenrich reports the case of a man, aged 26, who developed, and presumably was completely cured of, two separate and distinct syphilitic infections within a period of less than ten months; furthermore, the clinical and serologic response was unusually favorable under a rather mild antisyphilitic medication. The duration of the first infection was approximately three months; thence an interval of less than two months was followed by a second attack of probably one month's duration.

Wassermann Reaction in Pregnancy.—A study of the Wassermann reaction was made by Hinton on the blood of 10,427 pregnant women. The method employed utilized two cholesterinized antigens prepared from a plain alcoholic extract of human heart muscle and a more sensitive antigen, also cholesterinized, made from guinea-pig hearts. Sheep's cells were used as indicators. In 4.18 per cent. of these cases a positive reaction, and in 38.5 per cent. a doubtful reaction was obtained. In Hinton's experience, properly standardized cholesterinized antigens have yielded a negligible number of false positive reactions in child bearing women.

Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1922, **31**, No. 4

Mishaps in Puncture and Irrigation of Maxillary Sinus. W. E. Grove, Milwaukee.—p. 913.
Surgery of Ethmoid Labyrinth. A. H. Andrews, Chicago.—p. 947.
Pathologico-Anatomic Difference Between Fetid and Nonfetid Ozena. A. Rundstrom, Chicago.—p. 950.
*Abscess of Lung and Method of Prevention in Nasopharyngeal Surgery. C. W. Richardson, Washington, D. C.—p. 960.
Hyperplasia and Infection in Postethmoid-Sphenoid Ocular Complications. G. F. Harkness, Davenport, Iowa.—p. 964.
Some Phases of Esophageal Stenosis. R. McKinney, Memphis.—p. 977.
*Brain Abscess of Rather Long Duration. C. J. Adams, Kokomo, Ind.—p. 984.
Septic Type of Temperature not Referable to Ear in Cases of Acute Suppurative, Otitis Media. H. I. Lillie, Rochester, Minn.—p. 990.
Extradural Abscess Complicating Frontal Sinusitis: Report of Case. R. H. Skillern, Philadelphia.—p. 997.
Method of Demonstrating Surgical Anatomy of Mastoid by Models. J. W. Downey, Jr., Baltimore.—p. 1009.
*Technic of Thyrotomy. A. E. Hertzler, Halstead, Kan.—p. 1013.
Subcutaneous Emphysema of Neck and Chest Following Tonsillectomy in an Epileptic. Recovery. S. Rosenheim, Baltimore.—p. 1027.
*Case Showing Unusually Early Metastasis in Carcinoma of Vocal Cords. A. E. Hertzler, Halstead, Kan.—p. 1032.
Fatal Case of Vincent's Angina. D. N. Husik, Philadelphia.—p. 1039.
Roentgen-Ray Treatment of Tonsillar and Lymphoid Tissue. J. H. Trinder, Fort Sam Houston, Texas.—p. 1044.
Formation and Function of Accessory Nasal Sinuses and Mastoid Cells. A. W. Proetz, St. Louis.—p. 1083.
Operation of Total Laryngectomy for Cure of Intrinsic Cancer of Larynx. J. E. McKenty, New York.—p. 1101.
*Abscesses of Larynx and Trachea Following Influenza. C. F. Theisen, Albany.—p. 1118.
Some Points in Comparative Anatomy of Nose and Accessory Sinuses Which Account for Variations in These Structures in Man. J. M. Ingersoll, Cleveland.—p. 1123.
Intranasal Injection of Alcohol in Treatment of Hyperesthetic Rhinitis and Some of Nasal Neuroses. O. J. Stein, Chicago.—p. 1129.
Barnes' Drum Membrane Knife and Spatula. G. E. Barnes, Herkimer, N. Y.—p. 1137.

Prevention of Abscess of Lung in Nasopharyngeal Surgery.—The technic which Richardson has adopted and which seems to have eliminated this type of surgical risk in faucial surgery

consists in careful preoperative preparation of the patient; the presence of a skilled anesthetist; placing the patient in the moderate Trendelberg position during the operation; removing pus, cheesy material or liquid exudate from the tonsils by suction; gentle manipulation in applying compression and swabbing, and, finally, returning the patient to bed resting on the left side, and placing him in bed fare downward until he has thoroughly recovered from the anesthetic.

Technic of Thyrotomy.—For the removal of intrinsic tumors of the larynx Hertzler advocates the external operation, asserting that it is technically safe and simple; complications following the operation are negligible. He describes his technic.

Unusually Early Metastasis in Carcinoma of Vocal Cords.—Hertzler reports a case of malignancy of the vocal cord marked by the discovery of a metastasis before the intralaryngeal lesion was discovered. He attributes the failure to recognize the importance of a metastasis in the particular gland in question to ignorance of the lymphatic drainage of the larynx. Knowledge on this point, Hertzler says, should have led to the conclusion, when the malignancy was discovered in the lymph gland in that particular location, that there must be a hidden malignancy somewhere within the larynx.

Abscesses of Larynx and Trachea Following Influenza.—Six cases of abscess of the larynx and trachea occurring during epidemics of grip and influenza are reported by Theisen. The bacteriology of five of the cases was worked out. In none of the cases was the influenza bacillus found. In three cases, cultures showed mixed staphylococcus and streptococcus infection, and in the other two streptococcus. Theisen believes that the laryngeal and tracheal abscesses start as localized inflammatory processes, and then, owing to the patient's run down condition, with the addition of pyogenic organisms, the abscess gradually develops.

Archives of Occupational Therapy, Baltimore

February, 1923, **2**, No. 1

Music as Means of Mental Discipline. W. Van De Wall, New York.—p. 1.
Physical Exercise and Dancing. E. M. Huseby, Towson, Md.—p. 27.
Games and Dramatics. G. E. Harrington, White Plains, N. Y.—p. 31.
Toy Making as Therapeutic Occupation: Con. W. R. Dunton, Jr., Towson, Md.—p. 39.
In Defense of Toys. H. J. Hall, Marblehead, Mass.—p. 43.
Rejoinder. W. R. Dunton, Jr., Towson, Md.—p. 47.

Arkansas Medical Society Journal, Little Rock

January, 1923, **19**, No. 8

Important Points in Bone Surgery. A. Watkins, Little Rock.—p. 145.
Need of Sanatorium Care for All Tuberculous Persons. J. Stewart, Booneville.—p. 152.
Drug Addiction. T. B. Bradford, Brinkley.—p. 158.

February, 1923, **19**, No. 9

Modern Concepts of Tuberculosis. G. B. Webb, Colorado Springs, Colo.—p. 169.
Report of Case of Congenital Hypertrophic Pyloric Stenosis. W. R. Brooksher, Fort Smith.—p. 172.
Radiation in Treatment of Menorrhagia. D. A. Rhinehart, Little Rock.—p. 175.
Excision of Sensory Root or Trifacial Nerve. J. H. Scroggin, Little Rock.—p. 176.

Boston Medical and Surgical Journal

Feb. 15, 1923, **188**, No. 7

*Diagnosis of Cardiovascular Syphilis. W. D. Reid, Boston.—p. 189.
Viewpoint of a Physician. J. H. Nichols, Tewksbury, Mass.—p. 193.
Physiology of "Autosuggestion." D. Gregg, Wellesley, Mass.—p. 195.
Value of Medical Society to Community and Its Own Members. D. R. Lyman, Wallingford, Conn.—p. 196.

Diagnosis of Cardiovascular Syphilis.—The first essential in the diagnosis of cardiovascular syphilis, in Reid's opinion, is that it be given a place among the various diagnoses to be considered in any patient with suspected heart disease. Every case infected with syphilis is a case of potential heart disease, i. e., cardiovascular syphilis, and syphilis should be considered in every case of heart disease of obscure origin, even when the Wassermann test is negative. A positive Wassermann reaction is of value in supporting the diagnosis, but a negative report is often received and should not be allowed to shake the diagnosis of cardiovascular syphilis if sufficient other data point to the presence of that disease. The general examination should include a search for evidence of syphilis elsewhere in the body. Cardiovascular syphilis may be symptomless unless complications have ensued. The therapeutic test for syphilis is of distinct value in doubtful cases, and resort to this should be made more frequently.

Feb. 22, 1923, **188**, No. 8

*Progress and Results in Cancer Control. F. L. Hoffman, Sonoma, Mich.—p. 221.
Cancer as an Outpatient Problem. H. F. Day, Boston.—p. 225.
Cancer as a Preventable Disease. J. C. Bloodgood, Baltimore.—p. 226.
Wirsung to Riolan on Pancreatic Duct, and Riolan's Reply. J. Donley, Providence, R. I.—p. 229.

Results in Cancer Control.—Hoffman closes his discussion of this subject as follows: "Hence the problem of cancer increase and cancer control is a world wide phenomenon, calling upon the medical profession, in particular, to exert itself still more strenuously than as heretofore was the case, to bring about the control of a menace, which strikes sooner or later into every home in the land. If the mortality of tuberculosis in twenty years has been reduced 50 per cent., it should not be impossible, by deliberate means, to reduce the mortality from cancer 25 per cent. during the next twenty years, equivalent to an annual reduction in cancer deaths of possibly 25,000 to 30,000. The mortality can be reduced and it must be reduced, but a reduction can only be brought about through the wholehearted and thoroughly perfected cooperation of the medical profession, the general public and the health authorities of the state."

Colorado Medicine, Denver

February, 1923, **20**, No. 2

Fractures Involving Joints: Question of Movement. G. W. Miel, Denver.—p. 34.
Medicine and Publicity. P. Hillkowitz, Denver.—p. 43.
Mortality of Jews in Denver. Study in Group Vital Statistics. C. D. Spivak, Denver.—p. 46.

Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1922, **9**, No. 6

Preliminary Suggestions in Roentgen-Ray and Laboratory Therapy. R. R. Kime, Orlando, Fla.—p. 97.
Medical Legislation. J. D. Raborn, Plant City, Fla.—p. 100.
Molluscum Contagiosum with Multiple Lesions on Body and Extremities. J. L. K. Smith, Jacksonville, Fla.—p. 104.
Tests for Deafness. F. J. Walter.—p. 105.

Iowa State Medical Society Journal, Des Moines

February, 1923, **13**, No. 2

Cases of Foreign Body in Eyeball. W. B. Small, Waterloo.—p. 41.
Recurrent Hemorrhage into Vitreous: Report of Case. M. J. Joynt, LeMars.—p. 45.
Anterior Poliomyelitis: Review of Thirty Sporadic Cases. C. G. Field, Fort Dodge.—p. 48.
Diagnosis of Vascular-Renal Disease. N. B. Foster, New York.—p. 52.
Intestinal Obstruction. M. M. Ghent, St. Paul.—p. 56.

Journal of Bacteriology, Baltimore

January, 1923, **8**, No. 1

Micromanipulator for Isolation of Bacteria and Dissection of Cells. R. Chambers, New York.—p. 1.
Certain Phases of Nitrogenous Metabolism in Bacterial Cultures. G. G. De Bord, Boston.—p. 7.
Device for Tubing Cooked Meat Medium. W. L. Holman, Yosemite Valley, Calif.—p. 47.
Bacteriophage Phenomena. A. G. Kuttner, New York.—p. 49.

Journal of Industrial Hygiene, Boston

February, 1923, **4**, No. 10

Industrial Dermatoses. H. N. Cole and J. R. Driver, Cleveland.—p. 425.
Two Fatalities Due to Inhaling Phosgene. S. Delepine.—p. 433.
Reliability of Comf-Thermometer (Fresh-Air Gage) as Indicator for Cooling Effect of Air. H. I. Eadie, D. H. Ash and T. C. Angus, Cleveland.—p. 441.
*Pharmacology of Some Phenylenediamines (continued). P. J. Hanzlik, Cleveland.—p. 448.

Pharmacology of Phenylenediamines.—The results of Hanzlik's study indicate that the phenylenediamines are definitely toxic compounds. Dimethyl-para-phenylenediamine was found to be the most toxic, and meta-phenylenediamine probably the least toxic, although in some animals it appeared to be about

as toxic as para-phenylenediamine. Diethyl-para-phenylenediamine is about as toxic as the para compound. A summary of the principal actions of the phenylenediamines studied is presented. They stimulate the circulation, respiration, and smooth muscle of excised organs, and cause bronchoconstriction. Asthma and local inflammations of the respiratory tract among workers in the fur dyeing industry are commonly reported. Therapeutically, the phenylenediamines are of no significance. A scientific basis for the alleged antidiarrheal and antidysenteric properties of meta-phenylenediamine (lentin) is lacking, and its use is unwarranted. Experimental evidence indicates that it would increase persistalsis if anything, and that it might be harmful otherwise (by the production of effusions). The results of this investigation indicate that workmen should be protected against the phenylenediamines used in various industries, and that the use of para-phenylenediamine in hair dyes and cosmetics should be prohibited.

Journal of Infectious Diseases, Chicago

February, 1923, **32**, No. 2

Comparative Study of Precipitinogen and Precipitin Curves, with Especial Reference to Later History of Precipitin Curve. G. F. Forster, Madison, Wis.—p. 105.
Influence of Saturation on Properties of Antigen in Wassermann Test. C. L. A. Schmidt and S. E. Coffey, Berkeley, Calif.—p. 119.
Study of an Organism Resembling Bacterium Pullorum from Unabsorbed Yolk of Chicks "Dead in Shell." F. B. Beaudette, L. D. Bushnell and L. F. Payne, Manhattan.—p. 124.
*Relationship of Orange and White Pyogenic Staphylococci. I. J. Kligler and E. Krause, Jerusalem, Palestine.—p. 133.
Effect of Thyroidectomy, Controlled by Respiratory Exchange Measurements, on Antibody Formation in Rabbits. N. M. Take, New York.—p. 138.
*Microscopic Demonstration if Bacteria in Lesions of Epidemic (Lethargic) Encephalitis. E. C. Rosenow and G. H. Jackson, Jr., Rochester, Minn.—p. 144.
Food Accessory Factors (Vitamins) in Bacterial Growth. R. C. Robertson and D. J. Davis, Chicago.—p. 153.
*Studies of Fusiform Bacilli and Spirochetes. II. Their Occurrence in Normal Preputial Secretions and in Erosive and Gangrenous Balanitis. J. Brams, I. Pilot and D. J. Davis, Chicago.—p. 159.
Specific Precipitin Reaction of Semen. L. Hektoen and L. S. Manly, Chicago.—p. 167.
*Incidence of Hemolytic Streptococci in Normal Preputial Secretions of Men. I. Pilot and J. Brams, Chicago.—p. 172.

Relationship of Staphylococcus Pyogenes Aureus and Albus.—A systematic study was made by Kligler and Krause of the immunologic types of orange and white staphylococci for the purpose of preparing a proper polyvalent stock vaccine. Two main types of *Staphylococcus aureus* and two strains of *Staphylococcus albus* were selected. The vaccines prepared with these strains were as effective therapeutically as were autogenous vaccines.

Bacteria in Lesions of Lethargic Encephalitis.—The presence of organisms in or adjacent to the lesions in a series of cases of encephalitis which occurred in widely separated communities, their absence in tissues free from changes, and in control sections from persons that died from other diseases, Rosenow and Jackson believe indicate causal relationship. The shape and grouping of, and the gradation between, large and small organisms, and the breaking of large forms into small bodies, indicate that the various forms are modifications of the same micro-organism.

Bacteria in Preputial Secretions.—Under normal conditions fusiform bacilli and spirochetes were found by Brams, Pilot and Davis in the preputial secretions of fifty-one of 100 men examined. As about the teeth and tonsils, these organisms exist as saprophytes in the preputial sac. Associated with these bacteria were always pyogenic organisms, including staphylococci, *Streptococcus hemolyticus, S. viridans* and colon bacilli. A comparative study of the flora of the normal preputial secretions and the secretions from cases of erosive and gangrenous balanitis revealed a striking similarity in smears and cultures. Of special interest is the fact that, with fusiform bacilli and spirochetes normally present in the preputial sac, balanitis is not entirely dependent on the introduction of these organisms from other sources but may arise locally, particularly in men with phimosis, retention of secretions and lowered general resistance.

Hemolytic Streptococci in Preputial Secretions.—Hemolytic streptococci were isolated and identified by Pilot and Brams in the preputial secretions of nine of 100 normal men. They always occurred in small numbers. These streptococci agree in their morphology, cultural characteristics and fermentation reactions with the *Streptococcus pyogenes.* They appeared to be somewhat less pathogenic than similar streptococci from tonsils and adenoids.

Kansas Medical Society Journal, Topeka

February, 1923, **23**, No. 2

Upper Femoral Fractures. E. D. Ebright, Wichita.—p. 29.
Determination of Uric Acid in Blood. M. Dupray, Hutchinson, Kan.—p. 33.
Prostatic Hypertrophy—Its Treatment and Relief by Perineal Prostatectomy. J. E. Burns, Kansas City, Mo.—p. 38.
Use of Derivatives of the Tendo Achillis in Wound Infections and in Their Prevention. B. M. Deep.—p. 42.

Maine Medical Association Journal, Portland

February, 1923, **13**, No. 7

Louis Pasteur. T. J. Burrage.—p. 173.
Case of Erythrasma. R. B. Josselyn, Portland, Me.—p. 183.

Michigan State Medical Society Journal, Grand Rapids

February, 1923, **22**, No. 246

Indications for Use of Therapeutic Pneumothorax. H. M. Rich, Detroit.—p. 55.
Treatment of Mild Diabetes Mellitus. P. L. Marsh, Ann Arbor, Mich.—p. 56.
Chronic Mastoiditis. R. D. Sleight and W. Haughey, Battle Creek, Mich.—p. 61.
Indications for Radium Therapy in Ophtho-Oto-Laryngology. R. E. Loucks, Detroit.—p. 63.
Roentgen-Ray Treatment in Diseases of Ear, Nose and Throat. W. A. Evans, Detroit.—p. 65.
True Eclampsia and Renal Eclampsia. W. E. Welz, Detroit.—p. 71.
Acute Complete Inversion of Uterus. L. W. Haynes, Detroit.—p. 75.
Radium Treatment in Cancer of Cervix. C. D. Brooks, and Wm. R. Clinton, Detroit.—p. 80.
Carcinoma of Breast, Its Combined Treatment, Surgery, Roentgen-Ray and Radium. W. J. Cassidy, Detroit.—p. 83.

Military Surgeon, Washington, D. C.

February, 1923, **52**, No. 2

Extracts from History, Medical Department, United States Military Mission, Berlin, Germany, August 10, 1919. A. L. Parsons.—p. 113.
Medical Officer and Employees' Compensation Act. J. C. Pryor.—p. 131.
Tests for Cure of Syphilis. G. L. Qualls and A. G. De Quevedo.—p. 140.
Neurosyphilis. R. Sheehan.—p. 149.
Possible Fallacy in Calculation of Annual Death Rates. M. W. Hall.—p. 157.
Medical Contributions of Linnaeus. A. Egdahl.—p. 166.
Medical Man and Medical Reserve Corps, U. S. Army. N. W. Sharpe.—p. 174.
*Treatment of Hookworm Disease by Carbon Tetrachlorid. A. T. Cooper and A. J. Vadala.—p. 187.
Plea for Closer Relationship Between Pharmacy and Medicine. R. C. Holcomb.—p. 190.
Results After Orbital and Ocular Battle Injuries. R. A. Fenton.—p. 193.
Treatment of Chronic Otorrhea. J. D. Whitham.—p. 200.

Treatment of Hookworm Disease by Carbon Tetrachlorid.—The result obtained by Cooper and Vadala with only one dose of carbon tetrachlorid in the treatment of hookworm disease has been 100 per cent. cure. The drug was administered in soft gelatin capsules each containing 1 c.c. and was given in the mornings, preferably without breakfast.

New Orleans Medical and Surgical Journal

February, 1923, **75**, No. 8

What Are Vital Statistics? J. G. Dempsey, New Orleans.—p. 415.
Duties of Officials Relative to Public Health. M. W. Swords, New Orleans.—p. 421.
Some Phases of Rural Health. O. Dowling, New Orleans.—p. 423.
Typhoid from a Public Health Standpoint. J. Callan, New Orleans.—p. 430.
Treatment of Thyrotoxicosis. T. P. Lloyd, New Orleans.—p. 436.
Schick Test and Toxin-Antitoxin Immunization in Control of Diphtheria. W. H. Seeman, New Orleans.—p. 443.
*Relation of Gallbladder Disease to Diabetes. A. Eustis, New Orleans.—p. 449.

Relation of Gallbladder Disease to Diabetes.—Of thirty-six cases of alimentary glycosuria seen by Eustis, fifteen have shown definite gallbladder disease. Six of these patients have definite diabetes today, with hyperglycemia and other cardinal symptoms of the disease. Treatment and diet aimed at sparing the liver has given better results than a low carbohydrate

diet, and some have even become sugar free on a low protein diet. Eustis urges that more systematic examinations of patients with glycosuria should be made, with the object of determining what percentage of cases of glycosuria and true diabetes are associated with gallbladder disease.

New York Medical Journal and Medical Record

Feb. 21, 1923, **117**, No. 4

Theories and Theorizers Connected with Development of Laws of Heredity. J. A. Buchanan, Rochester, Minn.—p. 193.
Experimental Study of Immobility of Diaphragm. F. C. Baldberry, Perrysburg, N. Y.—p. 202.
General Theory of Neuroses. Part I. A. Polon, New York.—p. 206.
Localized Iris Changes. S. P. Sobel, New York.—p. 212.
*Belladonna Poisoning by Topical Application. H. Fried, New York.—p. 212.
Chronic Ulcerative Colitis and Its Treatment. M. Einhorn, New York.—p. 214.
Rôle of Focal Infection in Disease. S. Pern, Melbourne, Victoria.—p. 218.
Reinfection of Tonsillar Remnants After Incomplete Tonsillectomy. Report of Four Cases. J. A. Glassburg, New York.—p. 221.
Quackery de Luxe: Form of Medical Charlatanism Known as Orificial or Constructive Surgery. J. F. W. Meagher, Brooklyn.—p. 224.
Louis Pasteur. L. Gershenfeld, Philadelphia.—p. 231.
Pasteur's First Patient. M. W. Thewlis, Providence, R. I.—p. 235.

Case of Belladonna Poisoning by Topical Application.—In a case of so-called myalgia lumbalis, Fried prescribed as a liniment: tincture of aconite, 2 drams; tincture of belladonna, 4 drams; spirit of chloroform, 4 drams; sufficient soap liniment to make 6 ounces, to be applied by gently massaging or rubbing the muscles of the back. About twenty-four hours later Fried found the patient in bed, restless, giddy, very talkative, complaining constantly of pain in her throat and persistently trying to get out of bed. Her face was flushed, eyes bright, pupils dilated, tongue coated and dry, fauces and uvula reddened. Her chest was covered with a patchy erythematous rash. Pulse and respiration were markedly accelerated. Rectal temperature was 101 F. At times she was delirious. Inquiry brought out the information that the liniment had been continually applied to her back until the entire amount called for in the prescription had been consumed, resulting in belladonna poisoning. Three other cases are recorded in the literature.

Ohio State Medical Journal, Columbus

February, 1923, **19**, No. 2

Acute Infective Osteomyelitis. C. D. Hoy, Columbus.—p. 77.
Problem of Radium and Surgery in Treatment of Cancer. A. Strauss, Cleveland.—p. 85.
Vital Capacity with Respect to Diagnosis and Prognosis. L. A. Levison, Toledo.—p. 89.
*Use of Convalescent Serum as Prophylaxis in Measles and Chickenpox. K. D. Blackfan, M. F. Peterson and F. C. Conroy, Cincinnati.—p. 97.
Malignant Tumors of Sinuses. J. M. Waugh, Cleveland.—p. 100.
Traumatism of Kidney. T. P. Shupe, Cleveland.—p. 104.
Modern Methods in Prevention of Diphtheria. F. G. Boudreau, Columbus.—p. 107.
Blood Transfusion in Obstetrics. W. R. Barney, Cleveland.—p. 111.
Trachoma. J. W. Wright, Columbus.—p. 114.

Use of Convalescent Serum as Prophylaxis in Measles and Chickenpox.—Blackfan, Peterson and Conroy are of the opinion that the serum of patients convalescing from measles or chickenpox does confer an efficient temporary immunity when injected into susceptible individuals within five days after exposure. Even incomplete immunity limits the disease to a mild form and these serums afford a very efficient means of preventing severe epidemics in hospitals and institutions. These serums also afford valuable protection to those children exposed to measles and chickenpox, in whom the natural resistance has been lowered by other existing afflictions, and it is recommended that this protection be afforded all children exposed, not only while convalescing from acute diseases, but also when suffering from nutritional disturbances, tuberculosis and other chronic diseases.

Pennsylvania Medical Journal, Harrisburg

February, 1923, **26**, No. 5

Present Standard of Obstetric Practice in Rural Pennsylvania. C. G. Brumbaugh, Huntingdon.—p. 283.
More Important Obstetric Emergencies Met by General Practitioner. G. V. Janvier, Lansdowne.—p. 284.
Indications for and Technic of Cesarean Section. H. A. Miller, Pittsburgh.—p. 289.
Case of Epidural Abscess of Spinal Canal. E. M. Green, Easton.—p. 293.
Faulty Posture as Cause of Obscure Digestive and Nutritional Disorders; Report of Treatment of Fifty Cases by Abdominal Belt. P. Nicholson, Ardmore.—p. 296.
Spinal Anesthesia. Study of About 15,000 Inductions. W. W. Babcock, Philadelphia.—p. 303.
Acute Abdominal Conditions in Children from Medical Standpoint. J. P. C. Griffith, Philadelphia.—p. 312.
Nervous and Mental Symptoms in Case of Pellagra. C. C. Wholey, Pittsburgh.—p. 318.
Relationship of Appendicitis to Upper Abdominal Disease. J. B. Deaver, Philadelphia.—p. 321.
Status of Physician in Relation to Compensation Law. M. Behrend, Philadelphia.—p. 324.

Philippine Journal of Science, Manila

January, 1923, **22**, No. 1

*Treatment of Amebic Dysentery. A. W. Sellards and L. Leiva.—p. 1.
*Effect of Stasis on Development of Amebic Dysentery in Cat.. A. W. Sellards and L. Leiva.—p. 39.
Chemical Characters of Waters of Angat and Montalban Rivers. R. H. Aguilar.—p. 43.
Lycopodiaceae Philippinenses. V. W. Herter, Berlin, Germany.—p. 57.
*Antiscorbutic Vitamin in Some Oriental Fruits and Vegetables. H. Embrey, Peking.—p. 77.
Elacatidae of Philippine Islands and Adjacent Regions. E. A. Chapin, Washington, D. C.—p. 83.
Geographic Distribution of Cucujidae (Coleoptera) I. Laemophloeini. V. F. Kessel.—p. 91.
New Cercopides of the Philippines. V. Lallemand, Brussels.—p. 101.
Effects of Extracts of Ascaris Vitolorum on Experimental Animals. B. Schwartz.—p. 109.

Treatment of Amebic Dysentery.—Infections with *Endameba histolytica* were produced by Sellards and Leiva in cats, and treated successfully with emetin and with quinin. Papaverin was inefficacious. In the treatment of cats with quinin very large doses were required; but, in contrast to emetin, repetitions of the therapeutic dose could be tolerated for many days. Experimental amebic dysentery is a somewhat artificial condition; nevertheless, it responds to emetin in a manner similar to spontaneous dysentery in man. All of the patients studied had frank amebic dysentery, and were seen either in the first attack or during a typical relapse. Five were treated with *Castela nicholsoni*, two with *Brucea amarissima*, and two with *Harrisonia perforata*. Preparations of these plants were always given by mouth, except in one instance, when a few doses were given by rectal injection. Prompt relief of symptoms, accompanied by the disappearance of amebas from the stools, was obtained only with *Castela nicholsoni*. With each of the others, some clinical improvement occurred for a few days, but in three of the four cases the amebas persisted and the symptoms returned while the patients were under treatment. One patient relapsed; three patients remained entirely free of symptoms, although one was passing cysts of *Endameba histolytica*.

Effect of Stasis on Experimental Development of Amebic Dysentery.—A laparotomy was performed by Sellards and Leiva on three cats under general anesthesia and a ligature was placed around the large bowel in order to produce stasis in its upper end. A suspension of *Endameba histolytica* was inoculated into the cecum. All three animals developed lesions above the ligature. This experiment explains: (*a*) the usual occurrence of the initial lesions of amebic dysentery in the cat in the lowermost portion of the large bowel; (*b*) the superiority of intracecal inoculations over injections by rectum for insuring infection with ameba, and (*c*) the occasional failure of virulent amebas to infect susceptible kittens. Stasis is probably an important factor in determining the location of the lesions within the large bowel in spontaneous amebic dysentery in man.

Antiscorbutic Vitamin in Oriental Fruits and Vegetables.—Of the foods examined by Embrey, pomelo, cucumber, chico, and guava afforded the best protection from scurvy. In each case 10 gm. of the food given daily protected the animals from scurvy for a period of nine weeks. When deaths occurred on these diets after a few weeks, postmortem examination showed the causative factor to be pneumonia. Fifteen grams of banana each day gave protection from scurvy for a period of nine weeks; 15 gm. each of kangkong leaves and of camote leaves daily gave protection for a period of from seven to nine weeks.

Porto Rico Medical Association Bulletin, San Juan

Dec. 31, 1922, **16**, No. 140

*Surgery of Gallbladder. Jorge del Toro.—p. 235.
*Micro-Analysis of Blood. R. del Valle Sárraga.—p. 239. Cont'n.
*Lessons for Surgery from War. Amalio Roldán.—p. 246.

Surgery of Gallbladder.—Del Toro urges the necessity for varying the operative measures according to the individual case. His experience has demonstrated the wisdom of being content at times with an incomplete operation that does not follow any preconceived plan.

Microchemical Analysis of Blood.—In this instalment of his report of research on the blood, del Valle Sárraga presents evidence to show that the Ambard unsecretory constant does not yield any information which is not already available from the chemical findings in the blood.

Lessons for Surgery from World War.—Roldán discusses the evolution and revolution in surgery which resulted from the teamwork of the war. Operative surgery now, he says, seems to be in a period of retrogression. We operate so much earlier that the big operations of the past are not required. Greater skill in obstetrics prevents extensive vesico-vaginal fistulas, and prompter operation for strangulated hernia has done away with the necessity for extensive entero-anastomosis. He adds that gastro-enterostomy seems to be coming into its own again, after a period of eclipse. The combination of operative measures and fulguration for cancer has proved successful in some cases. He believes, however, that neither physiotherapy nor surgery can effectually combat cancer. We must look to biology, biochemistry and chemotherapy for this. If we can effectually combat the predisposition to cancer, the cure of confirmed cancer will then be within sight.

Public Health Journal, Toronto

February, 1923, **14**, No. 2

Work of Public Health Nurse in Montreal. E. Gagnon, Montreal.—p. 49.
Child Welfare in Prince Edward Island. A. E. MacMahon, Prince Edward Island.—p. 57.
Sewage Treatment for Isolated Houses and Small Institutions Where Municipal Sewage Is Not Available. E. Parry.—p. 62.
Canadian Social Hygiene Council. Social Case Sheet Investigation. M. Kensit, Toronto.—p. 68.
Venereal Disease Control in Ontario. E. L. Moore, Ontario.—p. 74.
Public Health Nurses in Venereal Disease Clinics. F. E. Brown, Toronto—p. 76.

Rhode Island Medical Journal, Providence

February, 1923, **6**, No. 2

Postoperative Lung Sequelae. J. Perkins, Providence.—p. 17.
*Postoperative Pulmonary Complications. C. O. Cooke and W. Pickles, Providence.—p. 18.

Postoperative Pulmonary Complications.—Of 1,000 operative cases on the surgical services of the Rhode Island Hospital which are analyzed by Pickles, thirty-nine patients developed some form of postoperative pulmonary complication. Nine of these patients died. Fewer deaths were caused by pneumonia. Two patients developed lung abscesses following operation. One of these died. Of four cases of lung infarction, one ended fatally.

Southern Medical Journal, Birmingham, Ala.

February, 1923, **16**, No. 2

*Gallbladder Disease. M. E. Rehfuss, Philadelphia.—p. 75.
Surgical Treatment of Diseases of Gallbladder. I. Abell, Louisville, Ky.—p. 83.
*Report of 3,080 Cases of Measles with Special Reference to Pneumonia. H. R. Mixsell, and E. Giddings, New York.—p. 90.
Dermatology. W. A. Pusey, Chicago.—p. 94.
Carbohydrate Metabolism. M. Smith, Jacksonville, Fla.—p. 99.
Radiotherapeutic Technic of Face and Mouth. W. A. Weed, Birmingham.—p. 102.
Clinical Aspects of Botulism. J. C. Geiger, Chicago.—p. 106.
Summary of Dengue Research, October to November 13, 1922. W. L. Holt, Little Rock, Ark.—p. 112.
Colloidal Preparations, Especially Colloidal Silver Chlorid. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 114.
Correction of Cleft Palate. W. A. Bryan, Nashville, Tenn.—p. 117.
Retroperitoneal Cysts: Report of Case. J. K. Simpson, Jacksonville, Fla.—p. 121.
Postoperative Care of Urinary Cases. A. L. Chute, Boston.—p. 124.
Training of an Obstetrician. C. R. Hannah, Dallas, Texas.—p. 131.
Aural Conditions Resulting from Pool and Sea Bathing. H. M. Taylor, Jacksonville, Fla.—p. 134.

Gallbladder Disease.—Medical men, Rehfuss states, cannot cure a diffuse, chronic cholecystitis in which there is infection and infiltration of the gallbladder wall. They cannot cure demonstrable gallstones. They cannot absorb adhesions between the gallbladder and duodenum and the stomach, nor can they by any stretch of the imagination replace an altered topography due to an extensive lesion in the upper right quadrant. On the other hand, the medical man can and does relieve low grade infections, biliary stasis, functional alterations of the digestive tract with unquestioned functional disturbances in the liver and gallbladder. In many instances he makes a patient with gallstones entirely comfortable, and for years, in many instances, he succeeds in rendering a person immune to further attacks which are unquestionably those of infection of the gallbladder. As to whether the gallbladder ought or ought not be removed, it is Rehfuss' opinion that if the gallbladder wall shows unquestioned evidence of infection, it should always be removed. No form of drainage succeeds in controlling a form of focal infection. But the surgeon who operates upon the gallbladder simply operates upon the end-product of the forces producing gallbladder disease. The rest of the hepatoenteric circulation is still intact and the deviations which have brought about the disease are still present. Therefore, it is urgently necessary for the medical profession to realize the necessity for some form of postoperative procedure in gallbladder cases in precisely the same way that it realizes the postoperative ulcer cure.

Pneumonia Following Measles.—In this series of 3,080 cases of measles, pneumonia, bronchial and lobar, occurred in 826, a percentage of 26.8. In other words, one out of every four patients with measles, either had pneumonia on admission to the hospital or developed it during the course of the disease. Of the 826 cases of pneumonia, 424 terminated in death, 51.33 per cent. The number of deaths from all causes was 476, so that 89.20 per cent. of all the deaths in measles were due to pneumonia.

Surgery, Gynecology and Obstetrics, Chicago

February, 1923, **36**, No. 2

*Carcinoma of the Jaws, Tongue, Cheek and Lips. G. W. Crile, Cleveland.—p. 159.
*Carcinoma of Tongue. E. S. Judd and G. B. New, Rochester, Minn.—p. 163.
*Carcinoma of Lip and Cheek. G. E. Brewer, New York.—p. 169.
*Polycystic Kidney. R. H. Crawford, Rutherfordton, N. C.—p. 185.
Leukoplakia of Renal Pelvis: Report of Case. R. E. Cumming, Detroit.—p. 189.
*Echinococcus Disease of Kidney. H. L. Kretschmer, Chicago.—p. 196.
*Hitherto Unrecognized Mode of Origin of Congenital Renal Cysts. O. F. Kampmeier, Chicago.—p. 208.
*Uterine Secretion: Experimental Investigation Into Its Effect on Coagulation of Blood. I. Kross, New York.—p. 217.
Surgical Importance of Iodin Idiosyncrasy and Poisoning. H. G. Rowell, New Bedford, Mass.—p. 219.
*Association of Fetal Monstrosities and Deformities with Placenta Praevia. J. P. Greenhill, Chicago.—p. 227.
*Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy. E. M. Hawks, New York.—p. 232.
*Carcinoma Mammae. J. E. Sadlier, Poughkeepsie, New York.—p. 235.
Full Term Ovarian Pregnancy. F. L. Good, and T. K. Richards, Boston.—p. 239.
Treatment of Hydatiform Mole and Chorio-Epithelioma; Relative Frequency of Each. O. A. Gordon, Jr., Brooklyn.—p. 242.
Fibroma of Ovary. Report of Fifty-Five Cases. M. R. Hood, Rochester, Minn.—p. 247.
Intracranial Aerocele Following Fracture of Skull. Report of Case with Review of Literature. F. C. Grant, Philadelphia.—p. 251.
*New Method of Gallbladder Dissection. G. L. McWhorter, Chicago.—p. 256.
Intestinal Resection in Massive Umbilical Hernia. H. L. Foss, Danville, Pa.—p. 263.
Aseptic Resection of Intestine. E. D. Highsmith, Atlanta, Ga.—p. 271.
*New Technic for Posterior Gastro-Enterostomy. R. R. Villegas, Buenos Aires, Argentine.—p. 273.
New Method of Making Ureteropyelograms. N. P. Sears, Syracuse, New York.—p. 274.
*Heart Massage as Final Resort for Resuscitating Hearts Failing Under General Anesthesia. T. C. Bost, Charlotte, N. C.—p. 276.
*New Procedure in Treatment of Eclampsia. H. J. Davidson, Seattle, Wash.—p. 280.

Carcinoma of Jaws, Tongue, Cheek and Lips.—The logical technic for removal of cancer of the cheeks, lips, jaws and tongue, Crile says, is a complete block excision of the regional lymphatic system, together with a wide excision of the primary focus. In operations for cancer of the buccal mucous membranes, a "platter" of underlying bone should be removed

together with the intact growth. No cancer tissue should be cut or handled. Gas oxygen combined with local anesthesia or local anesthesia alone is the choice. A single treatment with deep, accurately measured roentgen ray or radium dosage is employed after operation.

Carcinoma of Tongue.—All patients with operable cancers of the tongue, Judd and New state, should be given the benefit of surgery, including cauterization of the local lesion and excision of the glands of the neck. Radium should also be employed in order to give these patients every possible chance.

Surgical or Radium Treatment for Cancer.—Brewer's statistics are said to prove that the results of surgical treatment of the lip are far superior to those as yet obtained by radium, and that surgeons are not justified at the present time in advising radium treatment in early operable cases. On the other hand, in cancer of the cheek, the results by radium are so evidently in advance of those obtained by operation, that until it can be demonstrated by a series of cases observed for three to five years that operation gives equally good results, all cancers arising in the mucous membrane of the cheek should be treated by radium.

Polycystic Kidney.—Crawford cites the case of a man who had a polycystic kidney and many of whose ancestors for three generations had had the same disease. Hence, Crawford concludes, that polycystic kidney is a familial affection.

Echinococcus Disease in Right Kidney.—In Kretschmer's case, a preoperative diagnosis of tumor in the right kidney was made, but the nature of the tumor was not recognized.

Origin of Congenital Renal Cysts.—Several interesting and significant observations in the developing human kidney have been made by Kampmeier, which have a direct clinical bearing. These are: (1) the existence of avestigial primary generation of uriniferous tubules; (2) the occasional cystic transformation of such vestigial tubules; (3) the early communication of the next or second order of uriniferous tubules (the first generation of previous authors) with collecting ducts of the corresponding order, namely the second; (4) the temporary detachment of most of these tubules from the secondary collecting ducts and their reunion with ducts of the fourth and fifth orders; (5) the later permanent separation of these uriniferous tubules from those ducts and the cystic transformation of most of them; in other words, the apparently constant appearance of renal cysts at a certain period of fetal life. That these vestigial tubules may have an important clinical significance is shown by the discovery of their occasional cystic transformation. It is easily conceivable how not only a single renal cyst may be derived from them in a kidney otherwise normal, but by its further growth and pressure might readily become the starting point of a progressive formation of cysts involving the entire neighboring portion of the kidney.

Effect of Uterine Secretion on Coagulation of Blood.—In a series of preliminary experiments with human endometrium, Kross tested the effects of the extract on coagulation of human blood. The results obtained were inconstant and contradictory. The problem was then approached from the animal experimental side to determine its effect on the coagulation of blood as a step in the solution of the problem of pathologic uterine hemorrhage. These experiments gave evidence that the uterine secretion in rats contains a substance or substances that have the power of delaying coagulation time and of dissolving blood clots. Kross is of the opinion that the results of his experiments justify the theory that the cause of abnormal uterine bleeding, not accounted for on anatomic grounds, i. e., neoplasms, etc., lies in a deviation from the normal physiology of the secretion formed in and by the uterine mucosa. That this, in turn, is controlled by the ovary, either in whole or in conjunction with other glands of internal secretion, is regarded as most likely.

Fetal Monstrosities and Placenta Praevia.—An attempt is made by Greenhill to prove that fetal monstrosities and deformities not infrequently occur in cases of placenta praevia. To fifteen cases found in the literature he adds six. It is his belief that the monsters associated with placenta praevia are due to the faulty relation between the placenta and the fetus which gives rise to arrests in development.

Statistics for Ectopic Pregnancy.—Of 824 cases of ectopic pregnancy, in which Hawks analyzed the histories, 187 patients were prostrated from hemorrhage. There were ten deaths from hemorrhage in seventy-four of these cases. The remaining 113 patients were operated on immediately. In 1921 there were twenty deaths from ectopic gestation in the borough of Manhattan and five of these women died from hemorrhage unoperated on. The mortality in 113 consecutive cases of collapse in which operation was done immediately was 8.8 per cent. The mortality in seventy-one consecutive cases of collapse with expectant treatment and deferred operation was 17 per cent.

Breast Cancer Statistics.—Seventy cases of breast cancer which were submitted to operation are reviewed by Sadlier. The mortality in this series was 51.4 per cent. The patients died from other conditions without recurrence of carcinoma and with an interval of from one to ten years of perfect health; 32.85 per cent. of patients are living without recurrence; eighteen patients are living more than three years after operation; fourteen are living more than five years after operation. The total number cured, based on a five-year period, is seventeen.

New Method of Gallbladder Dissection.—McWhorter describes what he terms a lateral posterior approach to the gallbladder, followed by posterior dissection. He claims that the dangers from hemorrhage from a torn cystic artery and injury of the bile ducts from hurriedly applied hemostats are avoided, and the method is easier mechanically than any other.

New Technic for Posterior Gastro-Enterostomy.—The technic described by Villegas differs from the usual technic in that clamps are not employed, and that after inserting the first line of serous sutures the jejunum is turned from the right to the left side of the patient.

Heart Massage for Resuscitation After Anesthesia.—Of seventy-five cases on record in which heart massage was employed, sixteen were successful, ending in complete recovery; twenty-three were partially successful in that the heart beat and respiration were resumed, but the patients died in from one-half hour to two or three days. Bost has had two cases. One patient lived fourteen hours from the time of resuscitation; the other seventy-seven hours. In the first case heart action had been suspended for about six minutes before heart massage was begun; and in the other case, for about twenty-five minutes.

Treatment of Eclampsia.—Davidson's routine treatment in postpartum eclampsia consists in first injecting from 0.5 to 1 grain morphin hypodermically, repeating as indicated. Every four hours from 1 to 1.5 liters of water is put into the stomach through the tube, the larger quantity unless signs of retching supervene, in which case the tube is quickly withdrawn. In a total of more than seventy gavages, Davidson says he has never recovered a drop of water introduced four hours previously. From 1 to 1½ ounces of magnesium sulphate is given twice in the twenty-four hours and 20 grains of potassium acetate and potassium citrate or some alkaline diuretic is given with each gavage. Excessive bed clothing, artificial heat, hot packs and bleeding are all discarded.

U. S. Naval Medical Bulletin, Washington, D. C.

February, 1923, **18**, No. 2

Military Surgeon as Specialist. D. N. Carpenter.—p. 177.
Equipment of Transports During World War. J. J. Snyder.—p. 185.
Plastic Surgery. L. W. Johnson.—p. 214.
Clinical Value of Blood Chemistry in Chronic Nephritis. J. J. O'Malley.—p. 219.
Correction of Occlusal Stress on Inlay Patterns Without Distortion. H. E. Harvey.—p. 224.

West Virginia Medical Journal, Huntington

February, 1923, **17**, No. 8

Evolution of Modern Diagnosis; Historical Review. G. B. Capito, Charleston, W. Va.—p. 297.
No More Doctors Needed in West Virginia. A. B. Butt, Elkins, W. Va.—p. 303.
Plea for Early Operative Measure in Gallstones. C. F. Hicks, Huntington.—p. 310.
Diseases of Female Bladder. L. W. Bremerman, Chicago.—p. 313.
Pott's Disease—Its Unsuspected Frequency in Adults and Its Comparative Difficult Early Diagnosis. C. Riely.—p. 321.
Case of Brain Tumor. W. A. Wallace.—p. 325.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 10, 1923, **1**, No. 3241

*Some Problems of Gastric and Duodenal Ulcer. B. Moynihan.—p. 221.
Sleep and Sleeplessness. W. J. Smyth.—p. 226.
Instruments Left in Peritoneal Cavity: Analysis of Forty-Four Unpublished Cases. C. White.—p. 228.
*Treatment of Trypanosomiasis. C. H. Marshall and S. M. Vassallo.—p. 231.
*Histologic Conditions in Case of Addison's Disease. E. E. Hewer.—p. 235.
Two Cases of Horseshoe Kidney. C. Morson.—p. 236.

Some Problems of Gastric and Duodenal Ulcer.—The number of cases reviewed by Moynihan is 718. These consisted of 531 cases of duodenal ulcer (men 433, women 98); 164 cases of gastric ulcer (men 83, women 81). In 152 cases one ulcer was present: in twelve cases two or more ulcers existed. There were twenty-three cases of gastric and duodenal ulcers together (men, ten; women, thirteen). In the total number of cases of gastric ulcer (187) a duodenal ulcer was found, therefore, in 12.3 per cent. The last death from any operation for duodenal ulcer occurred in 1912; since then there have been more than 500 consecutive cases without a death. Among the total number of patients operated on for duodenal ulcer there were six who later developed jejunal ulcers. The mortality in cases of gastric ulcer, and gastric and duodenal ulcer, treated by gastrectomy is 1.6 per cent. Moynihan approves of the fractional method of Rehfuss in the examination of the gastric contents. Only 20 per cent. of thirty-nine cases of gastric ulcer showed a high normal curve or hyperchlorhydria, whereas the percentage of such changes in seventy-one cases of duodenal ulcer was 72.7. The comparative value of medical and surgical treatment is discussed. Moynihan's position is well known.

Treatment of Trypanosomiasis.—In the cases analyzed by Marshall and Vassallo only one complete treatment was given—that is, one intravenous injection of arsenic and one intrathecal injection of serum the following day, as against the prolonged treatments of others and all the patients (twenty-nine) are "alive and well."

Histologic Condition in Addison's Disease.—In the case recorded by Hewer old pleural adhesions were present over the whole of the right lung; a few scars of old healed tubercles were found at the right apex. The bronchial glands showed no evidence of tubercle. The heart weighed 230 gm. and was normal. The liver weighed 1,450 gm. and was slightly nutmeg. The gallbladder was distended and contained a single small black stone; there was no evidence of inflammation. The spleen weighed 200 gm.; there was moderate perisplenitis. The kidneys were normal. The right suprarenal weighed 16 gm.; the left, 22 gm. The right gland was small and fibrous, the left showed much fibrosis and some areas of caseating material. No evidence of accessory suprarenal tissue was found. Only one small area of cortical tissue was found involved in a chronic tuberculous process with round cell infiltration showing an unusually high percentage of plasma cells. There was much fibrosis, some calcification, and formation of many giant cell systems. The cells of the cortical tissue were of the type belonging to the zona fasciculata, many of them spherical with strongly eosinophil cytoplasm and excentric nuclei; other cells were very irregular, with poorly staining nuclei. Hewer argues that the unhealthy appearance of these cells might have been due to postmortem changes, but more probably indicates the breakdown of the last remnants of true cortical tissue. No medullary tissue was found. The surrounding fat was unusually rich in small round cells. A small ganglion just outside the organ showed some cellular degeneration and pigment deposition.

Feb. 17, 1923, **1**, No. 3242

John Hunter (1728-1793): His Affairs, Habits and Opinions. J. B. Sutton.—p. 267.
*Properties of Certain "Colloidal" Preparations of Metals. A. J. Clark.—p. 273.
*Five Cases of Diabetes Mellitus in Young Children. F. J. Poynton.—p. 277.
Botulism as Seen in Scotland in 1922. T. K. Monro and W. W. N. Knox.—p. 279.
*Cause and Cure of Chronic Rheumatism. E. H. Freeland.—p. 281.
Treatment of Three Cases of Oriental Sore by Phosphorated Oil. A. Castellani.—p. 283.

"Colloidal" Preparations of Metals.—The physicochemical tests employed by Clark indicated that the active principles of some of the "colloidal" preparations investigated were entirely in the colloidal form; in other cases the active principles were partly in colloidal form and partly in true solution; while in some cases the whole of the active principle appeared to be in true solution. The pharmacologic tests employed failed to show any marked difference between the action of the "colloidal" preparations tested and the action of the same substances in true solution.

Diabetes Mellitus in Young Children.—Poynton's patients varied in age from 5½ to 9 years. The quantity of sugar in the urine varied from 2.2 per cent. to 8.6 per cent. One patient had suffered from diabetes for eleven months. Death was sudden. A necropsy was not permitted. Another patient died about three years after the onset of the disease. The liver was large, pale and flabby; the kidneys appeared natural. The pancreas was small and soft, and microscopy showed no increase of fibrous tissue but atrophy of cells. The gland looked exhausted, and the cells of the islands of Langerhans were atrophied and separated by connective tissue. The third case was of especial interest because there had been a history of only one week's illness. The fourth patient was ill about two years. The postmortem examination showed, as in the second case, a fatty liver, but the pancreas was shrunken and even more wasted than in the former case. Microscopy showed no active reaction, no trace of inflammatory change, but similar shrinking of the cells of the islets and relative increase of connective tissue. The fifth patient was ill about two and one-half years. There was no necropsy. Poynton says that this fact, if nothing more, is to be learned from these cases—that even in the young, with careful dieting (and presumably some care will always have to be taken with the diet), sugar and ketone bodies may disappear for weeks and months.

Cause and Cure of Chronic Rheumatism.—Freeland asserts that rheumatism is a definite disease due to the invasion of the part affected by the *Streptococcus rheumaticus* of Poynton and Paine, and that the only method of treatment which can be expected to give results is vaccine therapy.

Journal of Tropical Medicine and Hygiene, London

Feb. 1, 1923, **26**, No. 3

Description of the Diseases of Mongalla, Central Africa. E. B. N. Cantlie.—p. 35.
Porocephalus Pomeroyi. W. N. F. Woodland.—p. 45.
Clinical Experience with Insulin (Pancreatic Extracts) in Treatment of Diabetes Mellitus. F. G. Banting, W. R. Campbell and A. A. Fletcher.—p. 50.
Case of Bronchomoniliasis. M. J. Parmanand.—p. 54.

Lancet, London

Feb. 10, 1923, **6**, No. 5189

*Relation of Disease of Gallbladder to Secretory Function of Stomach and Pancreas. H. E. Griffiths.—p. 265.
Progress and Problems in Epidemiology. R. J. Reece.—p. 271.
*Pernicious Anemia Analysis of 117 Cases. P. N. Panton, A. G. M. Jones and G. Riddoch.—p. 274.
Intrathoracic Catastrophes Simulating Acute Abdomen. J. H. Pringle.—p. 279.
Treatment of Kala-Azar by "Stibenyl." Report of Ten Cases. L. E. Napier.—p. 280.
Case of Enuresis Treated by Electricity. M. O'. Beadon.—p. 283.
Herpes and Varicella. J. F. McClean.—p. 283.
*Case of "Subpleural" Lipoma in Child. C. F. Beyers.—p. 283.
Acute Osteomyelitis Treated by Early Incision; Recovery. P. B. Kittel.—p. 284.

Relation of Disease of Gallbladder to Secretory Function of Stomach and Pancreas.—Griffiths endeavors to show that the gallbladder is only a unit in a definite digestive complex embracing the liver, gallbladder, pancreas and stomach, and that any disease affecting one unit is bound to be reflected in the whole system. A careful analysis of the history and clinical examination of a patient suffering from disease of the gallbladder will reveal many points indicative of involve-

ment of the stomach and the pancreas, but which none the less point to the original trouble. Infection of the gallbladder acting reflexly through the vagus nerve tends to cause hyperchlorhydria and regurgitation. In some cases, in which the sensory stimulus is greater, pylorospasm is the result of a sympathetic reflex through the ninth thoracic segment. Regurgitation from the duodenum may also be attributed to the unregulated flow of bile in cases in which a gallbladder is no longer capable of acting as a reservoir. The pancreas is peculiarly prone to infection from the gallbladder. In the majority of cases infection occurs through the lymphatics; in others by the regurgitation of bile along the main duct consequent upon obstruction at the ampulla of Vater. This obstruction is frequently due to spasm of Oddi's sphincter and occurs with pylorospasm. The secretion of the pancreas into the duodenum is seldom markedly diminished, the exception being in cases of catarrhal pancreatitis; but through lack of adequate admixture of bile, the digestive function of the pancreatic juice may be seriously diminished. The internal secretion of the pancreas, except in very rare cases—e. g., pancreatic necrosis—is not very much upset, although the increased amount of diastase in the urine and occasional positive Loewe's reaction are indications of some slight alteration. In some obscure cases of gallbladder disease, in which the cause cannot be found by the ordinary clinical methods, exhaustive examination of the functions of the stomach and the pancreas may lead to a correct diagnosis.

Pernicious Anemia.—The clinical records of 117 cases of pernicious anemia are analyzed by Panton, Jones and Riddoch. The average age of the patients was 46, with extremes of 20 and 68, the average duration of symptoms up to admission to hospital was seventeen months, the two extremes being seven days and six years. One hundred and seven patients complained of weakness, and in forty-nine it was the chief complaint. Thirty-three patients had noticed a change of color. The primary complaint of eight patients was loss of weight, and twenty-six patients were noted as being wasted. Fever was noted at one time or another in ninety cases, the average range being from 99 to 100 F. It was noticed in studying the temperature charts that improvement in a patient's condition was, as a rule, synchronous with the disappearance of the fever. Further, the more acute the case, the more constant was the presence of the fever. Eighty-six patients complained of symptoms referable to the gastro-intestinal system; in fifty-three cases complaints of this nature were primary. On analysis, fifty-one patients complained of vomiting, thirty of diarrhea, twenty-six of anorexia, and twenty-four of epigastric pain. The authors are not of the opinion that oral sepsis has any proved etiologic significance in pernicious anemia, although it cannot but be detrimental to a patient's health and may at times produce a secondary anemia such as is caused by any other chronic suppurative process. While the very frequent occurrence of achylia was noteworthy, it is not considered an essential etiologic factor. Hematemesis was complained of by three patients, and in one instance only was it copious. The spleen was palpable in twenty-one cases, and the liver was enlarged in nineteen cases. Sixty-three patients complained of cardiovascular symptoms. Sixty-two patients had cardiac murmurs. Twenty-five patients complained of headache and eighteen of numbness and tingling of the hands and feet. Albuminuria was present in twenty-four patients, two passed bile pigment in the urine, and one showed glycosuria. In the authors' opinion, recovery from pernicious anemia is an event of such rarity that it cannot be accepted in any case without the fullest confirmation.

Subpleural Lipoma in Child.—Beyers' patient was only 22 months of age. A swelling on the front of his chest was first noticed by his mother when he was 10 months old. It was painless and caused no symptoms, but grew steadily larger. Its surface was somewhat lobulated, and it gave a feeling of fluctuation. At operation it was found to occupy the anterior mediastinum, pushing the pleurae away from each other and resting on the pericardium. It was circumscribed, lying quite loose in the areolar tissue and having no obvious organic connection with either pleura or pericardium. It was a fatty tumor.

Feb. 17, 1923, 1, No. 5190

John Hunter, His Affairs, Habits and Opinions. J. B. Sutton.—p. 315.
Physicochemical Mechanism of Cell Respiration. O. Meyerhof.—p. 322.
*Cases of Delayed and Immediate Anaphylactic Shock: Circulatory Phenomena. J. Fawcett and J. A. Ryle.—p. 325.
The Standard of Cure in the Treatment of Gonorrhea. W. L. Harnett.—p. 327.
Psychotherapeutics. E. F. Buzzard.—p. 330.

Cases of Delayed and Immediate Anaphylactic Shock.—Fawcett and Ryle cite the case of a woman who because of a "septic" finger was given 50 c.c. of antistreptococcal serum subcutaneously at the time of amputation of the finger. Four days later patches of urticaria began to appear, and there was slight evening pyrexia. Eight days after the serum was given the patient was wakened by breathlessness. She was seen sitting up in bed with "asthmatic" type of breathing. Within twenty minutes the asthmatic attack was over, but she felt cold and shivery, the pulse remained quick, and urticaria continued to appear. Under expectant treatment recovery occurred almost abruptly about thirty-four hours after the first appearance of urgent symptoms. In the second case the symptoms of anaphylactic shock appeared one hour after receiving a third dose of antitetanic serum.

Feb. 24, 1923, 1, No. 5191

*Therapeutic Inoculation. L. Colebrook, E. J. Storer and S. E. Wright. (To be continued.)—p. 365.
*Clinical Results of Treatment of Malignant Disease by Roentgen Rays. J. H. D. Webster.—p. 373.
Chronic Fecal Typhoid Carrier Successfully Treated with Detoxicated Vaccine. J. P. Watt.—p. 378.
Lethargic Encephalitis: Intensive Outbreak in Small School. L. L. Fyfe.—p. 379.
Two Cases of Acute Lymphatic Leukemia. W. E. Cooke.—p. 382.
Use of Rhubarb in Acute Bacillary Dysentery. H. C. Brown.—p. 382.

Therapeutic Inoculation.—In this instalment, Colebrook, Storer and Wright discuss the original pasteurian code, the bactericidal and opsonic changes produced in the blood by the inoculation of vaccines into the patient, and the changes produced in the blood by inoculation of vaccines in vivo and in vitro.

Treatment of Malignant Disease by Roentgen Rays.—The literature on this subject is reviewed and analyzed by Webster, and he agrees with Schmieden and Holfelder in their conclusions which represent what may be called cautious progressive present day opinion: (1) With few exceptions every operable carcinoma should be operated on, with prophylactic postoperative irradiation in addition. (2) In addition to postoperative irradiation, a single intensive irradiation before operation is coming to be considered important. (3) Practically all inoperable carcinomas and all inoperable recurrences should be irradiated. This gives in many cases clinical cure, in others it results in operability, often less bleeding, irritation and pain, as well as limitation of further metastasis. (4) Facial carcinoma, even when operable, can well be treated exclusively by irradiation for cosmetic reasons. (5) Sarcoma, as a rule, should only be irradiated, certainly in all cases in which operation would cause considerable bodily mutilaton. The time has not yet come when comparative statistics can show the value of operation or irradiation.

Acute Lymphatic Leukemia in Children.—The points of interest in the two cases recorded by Cooke are (1) the ages of the patients, 3 and 2½ years, respectively; (2) one is a female, and (3) in one case the lymphatic tissue enlargement was confined entirely to the abdominal glands, while in the other case all the lymph glands in the body were involved.

Medical Journal of Australia, Sydney

Jan. 13, 1923, 1, No. 2

Infant Feeding. E. S. Morris.—p. 29.
Action of Hexamethylene-Tetramine. M. G. Sutton.—p. 31.
Mechanism of Hyperchlorhydria. F. L. Apperly.—p. 33.
Dietetic Survey of Infants. F. H. Beare.—p. 37.
Case of Malignant Ovarian Cyst with Involvement of Appendix. A. L. Bryant.—p. 41.

Jan. 20, 1923, 1, No. 3

Diagnosis and Treatment of the Neuroses. M. C. Lidwill.—p. 57.
Deep Roentgen-Ray Therapy for Inoperable Malignant Disease. B. J. Harrison.—p. 62.
Case of Nocturnal Enuresis Presumably Due to Defective Cerebral Development. J. H. Anderson.—p. 68.

Bulletin de l'Académie de Médecine, Paris

Jan. 16, 1923, **88**, No. 3

*Smallpox Statistics. J. Arnaud.—p. 69.
*Blood Serum Reaction in Diagnosis of Cancer. R. Fischer.—p. 71.
*Treatment of Diabetes with Insulin. L. Blum.—p. 73.

Smallpox Statistics in Marseilles.—A report on the 121 cases of smallpox in Marseilles, from 1916 to 1922, shows the predominance of imported cases, and the value of good isolation.

Blood Serum Reaction in Early Diagnosis of Cancer.—Fischer assumes that as a rule the globulins protect the albumins from precipitation, forming a certain stable balance between them in normal conditions. He calls this faculty of the blood serum "prostaxis." A 2:1,000 solution of gelatin makes albumin coagulate more readily, while the globulin becomes less coagulable. When the protective action of globulins exists, the coagulation of the whole serum by alcohol is less pronounced after addition of gelatin than after the addition of normal saline. This protective action is not present in paroxysmal hemoglobinuria, cachexia and cancer. He used this reaction in twenty-nine cases of cancers and in controls with other diseases. He compares the response to the coagulant (alcohol) of serum diluted with normal saline and of serum diluted with a 2:1,000 solution of gelatin in normal saline.

Treatment of Diabetes with Insulin.—Blum prepared insulin according to Banting and Best's method, and reports two favorable clinical experiences. In the debate, Achard mentioned similar organotherapeutic experiments at his school in 1919, and especially some experiments, never published, which his pupil Gardin made with decoctions of pancreas. The transient suppression of glycosuria, valuable as it is, is not a cure for diabetes. Gley mentioned also his experiments. He did not use ligation of ducts, because they regenerate too easily. He injected fats into the ducts, and stained them to see whether the whole pancreas was injected. He deplores the lack of facilities for keeping animals for experimental work, which prevents many researches in France.

Jan. 23, 1923, **88**, No. 4

*Centennial Commemoration of Jenner's Death.—pp. 83-158.

The Jenner Centennial.—The proceedings at this special meeting in honor of the hundredth anniversary of the death of Jenner were mentioned in the Paris Letter, February 10, p. 416, and in the News department, p. 488.

Jan. 30, 1923, **89**, No. 5

*The Cancer Ferment. A. Robin.—p. 174.
*Earning Capacity of the War Disabled. Gourdon et al.—p. 177.
*Mohammedan Prayer Customs. Dinguizli.—p. 181.

The Ferment of Cancer.—Robin found that autolysis is stronger in a liver affected by cancer than in normal livers. The autolysis was more pronounced in the relatively sound portions.

Vocational Training of the War Disabled.—Gourdon reports the results of reeducation of soldiers who were mutilated or became sick during the war. The results are better in those who were injured (earning capacity of 90 per cent.).

Mohammedan Prayers and Hygiene.—Dinguizli describes the Mohammedan daily prayer ritual, prescribed movements, and the ablutions which should precede them. He proves, by quotations, that Mohammed was perfectly conscious of the hygienic importance of both the exercises and the ablutions. The author sees in these movements—five sets of six genuflexions, etc., daily—also a prophylaxis of appendicitis. Of course, the prescription of frequent washing cannot be observed by the poor classes or by inhabitants of deserts, who are allowed to use sand instead. Yet the middle classes are at least as clean as other races of the same social status.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 12, 1923, **47**, No. 1

*Retention of Bile Elements. Lemierre and Lévesque.—p. 5.
*Treatment of Gonococcemic Abscess. Léri and Luton.—p. 7.
*Kala-Azar in France. M. Labbé.—p. 10.
*Artificial Pneumothorax. E. Rist and F. Hirschberg.—p. 10.
*Sputum Examination. Caussade and Mme. Cribier.—p. 18.
*Chronic Bronchial Spirochetosis. P. Pagniez and A. Ravina.—p. 27.
*Progressive Lipodystrophy? L. Babonneix.—p. 29.
*Shock Treatment of Typhoid. A. de Verbizier.—p. 33.
*Roentgenologic Control of Bismuth Treatment. L. Veillet.—p. 35.
*Hyperesthesia of Thyroid Region. C. Lian.—p. 36.
*Typhoid Spleen and Paresis of Diaphragm. V. de Lavergne.—p. 43.
*Intermittent Fever of Meningococcus Origin. A. Netter.—p. 46.
*Temperature After Injury of Spinal Cord. S. I. de Jong.—p. 53.
Charcot-Leyden Crystals and Eosinophils. Idem.—p. 55.

Dissociated Retention of Bile Elements.—Lemierre and Lévesque observed a case of Weil's disease in which the Hay reaction (for bile salts) remained positive during convalescence while there was no bilirubin or urobilin in the urine. Yet the jaundice cannot be considered as dissociated, because examination of the blood revealed an increased proportion of bilirubin.

Treatment of Gonococcemic Abscess. — Léri's patient recovered from a gonococcus abscess on his shoulder after four injections of antigococcus serum directly into the cavity of the abscess.

Kala-Azar in France.—Labbé points out that the two cases of kala-azar recently reported as acquired in France bring to four the total already known.

Artificial Pneumothorax from Economic and Social Standpoints.—Rist and Hirschberg estimate that the actual financial gain from restoration of earning ability in their thirty cases of tuberculosis treated by artificial pneumothorax amounted to a total of 67,450 francs. Deducting the cost to the authorities of the free treatment, leaves still an important surplus on the right side of the ledger.

Comparison of Methods for Sputum Examination.—Caussade and Cribier examined the sputum from twenty cases by various methods. They found that Petrof's medium is very sensitive and gives results in fifteen days. The enrichment method of Bezançon, Mathieu and Philibert is far superior to methods based on simple staining. Negative results with all these methods may be explained by local congestion around the tuberculous process, blocking it, and thus preventing the elimination of the tubercle bacilli. Inoculation of animals should never be omitted in dubious cases.

Chronic Bronchial Spirochetosis. — Pagniez and Ravina report the case of a young woman who for fourteen years has had blood in the sputum every morning. There are no clinical nor radiologic changes to be detected in the lungs, and the patient feels well except for occasional migraine. The upper respiratory passages also have a healthy appearance. The sputum contains numerous spirochetes of the type described by Castellani, and especially shows the typical lysis after standing a few hours. Arsphenamin and iodids were without effect, and emetin only temporarily diminished the amount of blood in the sputum. In the discussion that followed, Debré related his experiences with inoculation of the rabbit cornea and testicle with sputum from two patients with this bronchial spirochetosis.

Progressive Lipodystrophy?—Babonneix demonstrated a case in a girl of 17 who had lost most of the subcutaneous fat above the waist, while fat had accumulated in the lower portions of the body. Deposits of fat on the posterior aspect of the arms, general asthenia, and some minor signs made the condition atypical.

Shock Treatment of Typhoid.—De Verbizier reports a case of typhoid with extremely severe onset in a young man. He was given two intravenous injections of colloidal gold, and defervescence followed on the fifth day of the fever, with speedy recovery. The shock reaction to the second injection was so violent that stimulants had to be applied.

Radiologic Control of Bismuth Treatment.—Veillet recommends roentgen-ray examination for determination of the complete resorption of bismuth before starting a second course.

Hyperesthesia of Thyroid Region.—Lian reports his further experiences with the sign described by him in 1918. It is necessary to avoid all suggestion, and to estimate the extent of hyperesthesia by merely observing the face of the patient. The point of a pin is drawn along the skin of the neck, very lightly pricking the skin. He does this on suspicion of exophthalmic goiter before he mentions the thyroid or attracts attention to it. This sign is not found very frequently, but it is reliable if it is distinctly present over the thyroid as a

whole or over the isthmus or one lobe. It may be a special form of what Mackenzie calls viscerosensory reflexes.

Typhoid Spleen and Paresis of Diaphragm.—De Lavergne attributes to paresis of the diaphragm the difficulty in palpation of a distinctly enlarged spleen in typhoid.

Protracted Intermittent Meningococcus Septic Fever.—Netter's patient was a boy, aged 11 years, who presented fever for 112 days without meningitis. The clinical diagnosis of meningococcemia was confirmed later by positive complement fixation. The child recovered after two injections of 1 or 2 c.c. of pus obtained by injection of turpentine into a horse.

Subnormal Temperature After Injury of Spinal Cord.—De Jong observed a temperature of 28 C. (82.4 F.) with pulse rate of 36 in a soldier paralyzed after a fracture of the laminae of the sixth and seventh cervical vertebrae by a bullet. The next day the temperature was 32.2 C., the pulse 40. The patient's mind was clearer, and the third day the temperature was 36 to 38.5 and pulse 84. The fourth day the temperature rose to 40 C. and the man died. A hemorrhage had compressed the spinal cord.

Paris Médical

Jan. 13, 1923, **13**, No. 2

*Hemiplegia in Heart Disease. H. Roger.—p. 37.
*Cold Abscess After Thoracentesis. Carnot and Blamoutier.—p. 45.
*Acute Meningitis in Infants. Lisbonne and Leenhardt.—p. 47.

Hemiplegia in Heart Disease.—Roger reviews the pathology and clinical features of hemiplegia due to heart disease. In young persons the hemiplegia is usually caused by a small embolus, and rarely persists. In old persons the condition is more serious, and the hemiplegia remains, if the patient does not die in coma. In contrast to this immediate prognosis, the cardiac disturbances are to be considered more seriously in young persons, because they may be due to malignant endocarditis. In old persons the absolute rest enforced by the paralysis may improve the condition of the heart. In the differential diagnosis, syphilis must be considered. Sometimes the spinal fluid presents characters of the puriform aseptic type: a milky white opalescent fluid with many polymorphonuclears which are however, absolutely intact. Albumin is slightly increased; the reducing power is normal; culture plates remain sterile.

Cold Abscess of Thorax After Thoracocentesis.—Carnot and Blamoutier publish four cases in which a tuberculous abscess of the chest wall developed after punctures of the thorax. It is easy to secure initial asepsis in making such punctures. But the asepsis cannot be maintained while drawing back the needle from an infected pleural cavity. One should not make useless exploratory punctures. The physician should especially avoid making several punctures close together at the same session, because such local lesions lead easily to the formation of an abscess. It would be well to put a drop of tincture of iodin into the needle before withdrawing it from the thorax. Autoserotherapy has very doubtful results. It is better avoided.

Primary Acute Meningitis with Influenza Bacillus in Infants.—Lisbonne and Leenhardt publish a fatal case of purulent meningitis, due to Pfeiffer's bacilli. The germs were very polymorphic.

Presse Médicale, Paris

Jan. 20, 1923, **31**, No. 6

Evolution of Surgical Obstetrics. Brindeau.—p. 57.
*Sugar in Blood and Spinal Fluid. Polonovski and Duhot.—p. 60.

Sugar in Blood and Spinal Fluid.—Polonovski and Duhot found a balance between the sugar levels in the blood and spinal fluid. This does not mean identity but a mutual relation expressed in parallel changes, as, for instance, after injection of epinephrin and in diabetes. The increase in the reducing power of the cerebrospinal fluid in encephalitis is due to hyperglycemia. They confirm the importance of a low sugar level in the fluid in purulent meningitis, but emphasize the necessity for determining the sugar content of the blood at the same time. The changes of equilibrium between the sugar content of the blood and of the spinal fluid are more significant than the absolute figures in the spinal fluid alone.

Jan. 24, 1923, **31**, No. 7

*Blood Supply for Sutured Intestine. E. Desmarest.—p. 69.
*Bacilli of the Colon and Lactic Group. H. Violle.—p. 70.
*Bronchial Asthma from Appendicitis. R. A. Gutmann.—p. 72.

Blood Supply to Sutured Portion of Intestine.—Desmarest considers an inadequate blood supply to the sutured stumps in operations on the duodenum or colon as the real cause of subsequent sloughing and peritonitis. Operations on the colon become comparatively harmless if the surgeon takes care to incise the free ends longitudinally until he gets into a freely bleeding part. Resection of the few centimeters beyond makes the results much better.

Differentiation of Bacilli of the Colon Group.—Violle recommends Lemoigne's reaction for determination of acetylmethyl-carbinol which is constantly produced by *Bacillus lactis-aerogenes* but never by the colon bacillus.

Asthma of Appendicitic Origin.—Gutmann reports four new cases in which attacks of bronchial asthma failed to reappear after appendectomy. In these cases of asthma of appendicitic origin, an attack of asthma can be brought on by applying pressure to the ileocecal region. His theory is that chronic appendicitis causes an abnormally irritable condition of the vagus nerve, and this vagotonia forms the soil on which disturbances of the colloidal equilibrium entail asthmatic attacks. He mentions a case of asthma in which the attacks were provoked by antipyrin. The patient bore this drug without disturbances after appendectomy.

Revue Franç. de Gynécologie et d'Obstét., Paris

Jan. 10, 1923, **18**, No. 1

Technic for Low Transperitoneal Cesarean Section. O. Beuttner.—p. 3.
*Late Syphilis of the Uterus. J. Mouchotte.—p. 9.

Tardy Syphilitic Disease of the Uterus.—Mouchotte discusses in particular uterine hemorrhage for which syphilis is responsible. Metrorrhagia without any signs of a gynecologic affection should be treated for syphilis, even with a negative Wassermann reaction. He wasted considerable time on other measures in a case described before he applied specific treatment and cured his patient, a woman aged 30. Franceschini warns that the cases of rapidly fatal uterine hemorrhages without known cause were probably all the result of syphilitic disease of the uterus.

Schweizerische medizinische Wochenschrift, Basel

Jan. 11, 1923, **53**, No. 2

Air Embolism from Criminal Abortion. T. Wyder.—p. 29.
*The Retroflexion Question. H. Meyer-Rüegg.—p. 34.
Research on Coagulation of Blood. A. Fonio.—p. 36. Cont'd.
Severe Injury During Manual Evacuation of Abortion. L. Raemi-Boesch.—p. 41.

Retroflexion of the Uterus.—Meyer-Rüegg believes that women would be less affected by disturbances due to uterine anomalies if physicians would agree to consider retroflexion as merely one of the various positions of the uterus. The condition does not require treatment except (1) in certain cases of sterility without other findings; (2) if there is danger of incarceration in the fourth month of a pregnancy; (3) if the uterus lies on the levator ani or extends into the genital hiatus; (4) as a mode of suggestion when psychotherapy otherwise has failed.

Policlinico, Rome

Jan. 8, 1923, **30**, No. 2

*Complement Fixation with Old Serums. G. Pansini.—p. 41.
*Calcium Treatment of Vomiting and Diarrhea. R. Monteleone.—p. 48.
Pyelotomy for Calculus in Kidney. A. di Blasio.—p. 51.
*Roentgen Treatment of Malaria. Committee Report.—p. 53.

Complement Fixation with Old Serums.—Pansini finds that serums giving a positive Wassermann reaction keep their power of complement fixation. Negative serums are liable to acquire this property. It seems that the direct anticomplementary action was not tested.

Calcium in Treatment of Vomiting and Diarrhea in the Tuberculous.—Monteleone publishes fourteen observations of the action of slow intravenous injections of 5 or 10 c.c. of a 10 per cent. solution of calcium chlorid. The results were very good.

Roentgen-Ray Treatment of Malaria.—The Italian official commission appointed by the government to study the question of roentgen-ray treatment of malaria here publishes its first report, edited by A. Busi. It states that this treatment is contraindicated in acute malaria. Large doses may bring on a severe attack with extensive invasion of the blood stream by the parasites. Chronic enlargement of the spleen frequently subsides under the irradiation. Some forms of malaria with infrequent attacks may be cured by roentgen treatment without drugs. The quinin-resistant forms should be treated with quinin again after the use of the roentgen rays.

Jan. 15, 1923, **30**, No. 3

Experimental Research on Hydrocephalus. A. Chiasserini.—p. 73.
*Hematuria Due to Strongyloidesis. P. Fornara.—p. 75.
*Test for Thiosulphuric Acid. E. Pittarelli.—p. 80.
Extrapyramidal Rigidity. R. Antoniotti.—p. 81.

Hematuria from Strongyloidosis.—Fornaro's patient, a previously healthy woman, suddenly developed pain, of the kidney colic type, and the urine contained blood, albumin and numerous larvae resembling filaria. Larvae of *Strongyloides intestinalis* were found in the stools. His retrospective diagnosis was that the larvae entering the body had made their way to the lungs and thence to the heart, and then had been swept in the blood stream to the kidney. The urine was free from blood in five days. Under treatment with hexamethylenamin, clinical recovery was soon complete, although strongyloides larvae were still present in the stools a month later. He found thymol in large doses, 6 to 8 gm. daily, the most effective means for expelling this nematode. The larvae die in a few minutes in a 1:1,000 solution of thymol.

Test for Thiosulphuric Acid in Organic Fluids.—Pittarelli comments on the delicacy and reliability of the para-amidophenol test he describes, which reveals even traces of hyposulphurous or thiosulphuric acid in organic fluids. A few crystals of the para-amidophenol, which is a common photographic developer, are dissolved in the fluid under examination, and hydrochloric acid is added in the proportion of 1 c.c. to 40 or 50 c.c. of the fluid. Then a 10 per cent. solution of ferric chlorid is added, a drop at a time. In the presence of thiosulphuric acid the tint changes to orange and then to yellow. With hydrosulphuric acid (sulphureted hydrogen) the tint is red. The response is distinct with one part of $H_2S_2O_3$ in 400,000 parts of water.

Jan. 22, 1923, **30**, No. 4

Incision at Lowest Point for Empyema. D. Taddei.—p. 105.
Epidemic Encephalitis with Parkinsonism. Lucherini.—p. 108.
*Experiences with Spinal Anesthesia. G. Ciaprini.—p. 111.

Spinal Anesthesia.—Ciaprini states that the anesthesia was complete in all but 27 of the 284 cases in which he applied it, and in these the stovain proved to be defective. No serious by-effects were ever observed, but pallor, vomiting, and slowing and weakening of the pulse were frequent. They all promptly subsided under injections of camphor or caffein. It was never necessary to inject the caffein or camphor into the spinal canal. In 11 cases there was retention of urine, but the catheter was not used, and the patients urinated spontaneously before the end of twenty-four hours. In 7 cases there were paresis, paralysis, incontinence, headache or backache, coming on a month or six weeks after the spinal anesthesia. In 5 there was rachialgia and in 2 paralysis of the legs, but all subsided within a few weeks. Local anesthesia was applied in another group of 105 cases. For operations on the kidneys and liver, the intraspinal anesthesia seems to be superior to other methods.

Jan. 29, 1923, **30**, No. 5

*Chronic Inflammation of Submaxillary Gland. G. Baggio.—p. 137.
Primary Influenzal Mastoiditis. G. Bilancioni.—p. 140.
Slow Breathing as Physiologic Aid in Repose Treatment of Pulmonary Tuberculosis. S. A. Knopf.—p. 142.

Chronic Inflammation in Submaxillary Gland.—The chronic fibrous inflammatory process in the young man was explained by the discovery of a scrap of grain in the submaxillary salivary gland.

Feb. 5, 1923, **30**, No. 6

Causes of Error in Radiologic Urinary Diagnosis. Dondero.—p. 169.
*Cerebral Thrombosis with Tubal Pregnancy. G. Lavezzi.—p. 174.
Fibroma in Round Ligament. G. Gaeta.—p. 177.
Improved Technic for Darkfield Microscopy. Vanni.—p. 177.

Cerebral Thrombosis as Complication of Ruptured Tubal Pregnancy.—The severe internal hemorrhage was accompanied by coma persisting after the laparotomy. This persistence was explained by the thrombosis found in the centrum ovale region. It seemed to have developed almost at the same time as the tube had ruptured. Cerebral hemorrhage had been suggested by the unconsciousness, but had been apparently refuted by finding profuse intra-abdominal hemorrhage.

Jan. 15, 1923, **30**, Surgical Section No. 1

Certain Anomalies in Plantar Aponeurosis. P. Barco.—p. 1.
*Sagging Liver. M. Fasano.—p. 6.
*Nonparasitic Cysts in the Liver. O. Margarucci.—p. 16. Conc'n.
*Recent Literature on Stomach Functioning. M. Ascoli.—p. 43.

Sagging Liver.—Fasano declares that many operations on the stomach and bowel attack merely the consequences of displacement of the liver, leaving the cause, the hepatoptosis, untouched. If the sagging liver had been restored to place, instead, these secondary affections of the stomach or bowel would have spontaneously corrected themselves in time. He describes a case in which the symptoms and roentgen findings indicated ulcer near the pylorus in the woman, aged 60. The whole harmlessly subsided after the liver had been restored to its normal place. The sagging of both liver and stomach had been evident, but the physicians consulted had assumed an ulcer in addition, to explain the severe clinical picture. In another woman, aged 48, the symptoms suggesting gastric ulcer were of four years' standing and the woman was very weak and emaciated. In both these cases the sagging stomach and liver were somewhat twisted, but were otherwise apparently normal. He cut the round ligament of the liver away from the abdominal wall and freed it up to the liver. He then drew it up to the ensiform process, and sutured it to the aponeurotic fascia. This lifted up the pylorus 6 cm. A few U stitches were taken also in the anterior margin of the liver and tied through the aponeurosis a little above the costal arch. In two other women, aged 51 and 46, the cecum was abnormally movable and distended, and a kink in the bowel was bound down by adhesions. After breaking up the adhesions, the sagging liver was restored to place. The assumption that the other disturbances were secondary to the visceroptosis and especially the hepatoptosis, was confirmed by the complete and permanent clinical recovery after hepatopexy with the round ligament. Fasano has had equal success in five other cases; suspending the liver corrected all the anomalies.

Nonparasitic Cysts of the Liver.—This is the conclusion of the article summarized on page 513. It has eight photomicrograms and nearly five pages of bibliography.

The Pathologic Physiology of the Stomach.—Ascoli reviews and compares modern views on the mechanism and functioning of the stomach. The contradictory phenomena observed in regard to pain in the stomach show that some of the factors involved are still a mystery. When the splanchnic nerves are blocked, the stomach is absolutely dead to pain from an operation, even although the vagus nerve is intact.

Riforma Medica, Naples

Jan. 22, 1923, **39**, No. 4

*Trapezius in Early Diagnosis of Tuberculosis. G. Iafolla.—p. 73.
*Modification of Blood Groups. P. Mino.—p. 75.
*Causes of Error in Folin's Test for Creatinin. E. Pittarelli.—p. 78.
Technic for Appendectomy. B. Matassa.—p. 80.
Vasomotor Disturbances in Surgical Affections. E. Aievoli.—p. 80.
Prophylaxis of Diphtheria. L. Torraca.—p. 82.

Hypotrophy of the Trapezius as Early Sign of Pulmonary Tuberculosis.—Iafolla asserts that Boeri called attention in 1906 to the importance of tenderness and hypotrophy of the trapezius muscle as a sign of incipient tuberculous disease of the lung. Many years later this sign was rediscovered by others, and hailed as instructive and reliable, an actual precursor of apicitis. Iafolla applied electric tests to the trapezius in these conditions, and found that the responses differed materially from normal. The charts given show that the muscle behaves as if fatigued or poisoned. The restriction of this to the trapezius alone suggests that the distur-

bance is a neurotrophic atrophy; this seems to be confirmed by the local tenderness which precedes or accompanies the hypotrophy.

Unchangeability of Blood Groups.—Mino's experience indicates that it is impossible to modify the iso-agglutinins and change blood grouping. He relates experiments with numerous patients and various drugs, all negative from this point of view.

Causes of Error in Folin Test for Creatinin.—Pittarelli declares that Folin's original method is entirely unreliable, and that no technic is known to date for a practical and accurate test for creatinin in the urine.

Jan. 29, 1923, **39**, No. 5

*Slight Fever with Latent Pleurisy. U. Baccarani.—p. 97.
*Wildbolz' Urine Reaction in Tuberculosis. M. Venuti.—p. 98.
*Chronic Invagination of Colon. G. Pinardi.—p. 101.
Treatment of Alopecia. E. Savini.—p. 103.
The Hemoclastic Crisis and Intravenous Therapy. G. Martinico.—p. 103.
Splenomegaly in Malaria. E. Aievoli.—p. 104.
Therapeutic Application of Anaphylaxis. I. Iacono.—p. 106.

Protracted Slight Fever.—Baccarani has had several cases of a prolonged slight fever in women, between 18 and 35 years of age, without cough, or pain anywhere; the respiratory organs were apparently normal except on light superficial percussion at the base of the thorax. This revealed mild pleurisy with effusion, confirmed by puncture. The pleurisy would have escaped discovery without this light percussion. For about six months the patients had been complaining of loss of appetite and flesh. The evening temperature ranged from 37.2 to 37.9 C. (99-100 F.); in the morning it was normal, as also when the patients stayed in bed. This orthostatic febricula suggested tuberculosis, but the diagnosis was not confirmed until the patient entered the hospital for a thorough examination.

Wildbolz Urine Reaction.—Venuti reports extensive experience with the Wildbolz auto-urine reaction which has demonstrated, he says, that a negative reaction almost certainly excludes tuberculosis. A positive reaction cannot be accepted as reliable unless controlled by testing the patient's own urine, physiologic urine, and the urine of a tuberculous subject, also testing the patient's urine on a tuberculous subject. These control tests remove all possible doubt as to the specificity and reliability of the reaction.

Chronic Invagination of the Colon in Adult.—Pinardi relates that the disturbances were of six weeks' standing in the case described. The diagnosis had been mucomembranous enterocolitis, but the persistent disturbances compelled operative intervention which revealed an old invagination of the cecum and ascending colon into the transverse colon. It was impossible to reduce the invagination and, as haste was imperative, the small intestine was joined to the sigmoid loop. It was the intention to remove the injured portion at a second operation, but the man would not consent to further intervention, and has been in good health during the eight months since.

Brazil-Medico, Rio de Janeiro

Jan. 13, 1923, **1**, No. 2

*Emotional Factor in Glaucoma. G. de Almeida.—p. 15.
Parasites of Trichomonas. A. Marques da Cunha and J. Muniz.—p. 19.
Brazilian Tick. New Species. H. de Beaurepaire Aragão.—p. 20.
The Rhodnius. New Species. A. Neiva and C. Pinto.—p. 20.
*Medical Impressions of British Guiana. H. C. de Souza Araujo.—p. 24.

Sudden Transient Glaucoma.—De Almeida reports six cases in which the emotional stress of an operation for cataract seemed to have been a factor in the sudden increase in the eye tension. The acute glaucoma was transient, and had disappeared by the next day. One elderly patient had borne the operation on one eye calmly, but was extremely agitated at the operation on the other eye, a month later, and the glaucomatous condition developed at once. Another patient was a young man with traumatic cataract, and his dread and excitement at the operation were extreme. The operator must be on the alert to detect the first sign of augmented tension and apply the necessary measures without a moment's delay. To this he attributes the favorable outcome and the fact that he has never had expulsive hemorrhage after his numerous cataract operations.

Medical Impressions of British Guiana.—De Souza Araujo was on a scientific mission from the Oswaldo Cruz Institute. Since 1913 there has been a well organized infant welfare service with visiting nurses at Georgetown. In 1920 the infant mortality was 14.8 per cent. when it was 17.1 at Rio de Janeiro. With a population of 360,000, it is estimated that there are 800 lepers; 540 are segregated at the Cocorite asylum, founded in 1845. In 1921 the government bought an island 20 miles from Port of Spain, and has arranged there a large colony for lepers. There are eleven hospitals in all for British Guiana. If Brazil were supplied with hospitals in the same proportion to the population, it would have to have 917 hospitals for its 30,000,000 inhabitants. He adds that the authorities keep the importation and sale of liquor under control. The saloons must close at 7 p. m. at Port of Spain. The morbidity is the same as that of northern Brazil. In 1921 there were 10,000 cases of *bouba* recorded, mostly in children, and the neo-arsphenamin treatment was applied in the home. The disease was epidemic at Trinidad and Tobago.

Jan. 20, 1923, **1**, No. 3

*Malaria. A. Godoy and C. Pinto.—p. 29.
*Roentgen Study of Digestion of Snakes. M. Rodolph.—p. 33.
The Physician and Eugenics. Renato Kehl.—p. 35.

Malaria.—This is an official report of a survey of malaria in the state of Campos, with suggestions for feasible prophylaxis.

Roentgen Study of Digestion in Snakes.—Rudolph reproduces a few roentgenograms of small animals in the digestive tract of snakes. He emphasizes the instructive data that can be thus learned in regard to ova and embryos in snakes, and other biologic problems.

Jan. 27, 1923, **1**, No. 4

*Three Cases of Blastomycosis. F. Terra.—p. 41.
*Bacteriophagy. Costa Cruz.—p. 44.
Triatomas in Rio District. A. Neiva and C. Pinto.—p. 45.
*Otosclerosis. S. C. da Silva.—p. 47. Conc'n No. 5.

Blastomycosis.—Terra reviews the two dozen cases that have been published in Brazil, and describes three cases recently treated in his service at Rio de Janeiro. In one of his three personal cases the man died, and blastomycetes were found in the lungs, spleen, kidneys and elsewhere. The affection was of three years' standing. In all the cases the diagnosis wavered betwen syphilis, tuberculosis and mycosis until the discovery of blastomycetes.

Bacteriophagy. — Costa Cruz' new experiments with d'Herelle's phenomenon confirm the facts observed by others but he interprets them differently. The pure bacteriophage does not lose its lysant power in contact with silver, even for weeks. Although this does not prove absolutely that the bacteriophage is a living virus, yet it harmonizes with this assumption better than with Bordet's view that the bacteriophage is enzymatic in nature. This question was discussed editorially in THE JOURNAL, Dec. 9, 1922, p. 2005.

Otosclerosis.—Cesar da Silva summarizes the latest works on this subject, and emphasizes the fact that different factors may be responsible in different cases. The various histologic changes, however, all blend into a uniform process in the course of their evolution.

Feb. 3, 1923, **1**, No. 5

*Tube-Casts in the Urine. H. L. and Renato de Souza Lopes.—p. 55.
Research on the Blastocystis. H. de Beaurepaire Aragão.—p. 58.
Toxicity of Chenopodium. Areobaldo Lellis.—p. 63.

Tube-Casts in Urine.—When hyaline tube-casts are masked by mucus, de Souza Lopes adds a small quantity of a saturated solution of sodium chlorid. This not only releases the casts from the mucus but induces retraction of the hyaline substance by an endosmotic current. The urine is set aside with some antiseptic for twelve or twenty-four hours to settle. Centrifugation does not answer the purpose so well.

Semana Médica, Buenos Aires

Dec. 28, 1922, **2**, No. 52. Pasteur Number

*The Glory of Pasteur. C. Richet.—p. 1326.
The Philosophic Legacy of Pasteur. E. Melchor de Vogué.—p. 1328.
Reminiscences of Pasteur. Jules Simon.—p. 1334.
Address on Twenty-Fifth Anniversary of Pasteur Institute. Roux.—p. 1336.

Influenza in 1921. A. Olivera.—p. 1348.
Hydatid Cysts of the Orbit. Paulina Satanowsky.—p. 1349.
*Nitrous Oxid Analgesia in Labor. F. R. Pasman.—p. 1355.
*Glycemia in the Pregnant. F. A. Deluca.—p. 1361.

The Glory of Pasteur.—The French Academy offered a prize in 1914 for the best poem on this subject; it was awarded to Prof. Charles Richet of Paris for the poem which is here reproduced in French. It fills two two-column pages.

Nitrous Oxid Analgesia in Labor.—Pasman reports five cases; he quotes the women's own description of the effect of the anesthesia, and emphasizes the lack of toxic action on mother or child, and the almost complete analgesia.

Glycemia in the Pregnant.—Deluca does not admit that the glycogen producing function of the liver is inadequate in pregnancy, as a rule. The sugar content of the blood and of the urine is not a reliable index of the functioning of an organ so complex as the liver.

Jan. 4, 1923, **1**, No. 1

Program and Aims of Course on Operative Medicine. Zorraquin.—p. 2.
*Rickets. Juan P. Garrahan.—p. 8.
*The Thermo-Injector. L. Samengo.—p. 17.
Case of Scleroderma with Hemorrhagic Tendency. Segura.—p. 20.
*Tuberculosis and Pregnancy. F. Etcheverry Boneo.—p. 24.
*The Liver in Pregnancy. Rafael Mestre.—p. 28.
*Physiologic Tests in the Insane. A. M. Sierra.—p. 31.
*Ocular Complications of Erythema Nodosum. P. Satanowsky.—p. 33.

Rickets.—Garrahan gives illustrations of several extreme cases, and discusses the present status of knowledge as to its etiology. Treatment must be based on air and sunlight, a well balanced diet, tonics, treatment of inherited taints, and means to promote fixation of calcium. The chief difficulty is to convince the family of the advantages of systematic heliotherapy for children, with or predisposed to rachitis. He protests against allowing children with pronounced rachitic deformity to walk or even stand. A hard bed should be used if there is any tendency to curvature of the spine. While the children are kept in bed, massage, tepid brine baths and rubbing with a coarse towel are useful. Rest should not be kept up after improvement is evident, but the exercise should be closely supervised to avoid excess. A 0.01 per cent. solution of phosphorus in cod liver oil is the most effectual method yet known to promote fixation of calcium.

The Thermo-Injector.—This is Samengo's name for his syringe with electric control which allows injection of a fluid at a given temperature—actually boiling water—without loss of heat or burning the hands. He has applied the Porter boiling water local treatment of exophthalmic goiter in six cases with excellent results. In two cases, previous Porter treatment with an ordinary syringe had failed of effect.

Tuberculosis and Pregnancy.—Of thirty tuberculous women supervised through a pregnancy and since, nine died, and the disease has progressed in two; this group of eleven were all in the third stage of tuberculosis. The disease remained stationary or materially improved in all the others. No ill effects from pregnancy were observed in any of them. When tuberculous women become pregnant or pregnant women become tuberculous, treatment should be applied as under other conditions, and with almost as good an outlook. All depends on the stage of the disease, the general condition, and the promptness with which treatment is begun. The premonitory and early signs and symptoms of tuberculosis are too often assumed to be toxic or reflex manifestations from the pregnancy itself. The subfebrile temperature, lassitude, pains in the shoulder, tachycardia and similar slight symptoms are overlooked until the tuberculosis has an irreparable hold on the lung.

The Liver in Pregnancy.—Mestre found the hemoclastic crisis pronounced in 40 per cent. of fifty women in the last three months of pregnancy. The Roch test was positive in 30 per cent. and the two tests were concordant in 64 per cent. The Roch test is with ingestion of methylene blue.

Physiologic Tests in the Insane.—Sierra reports the findings in 100 insane persons tested with the Löwi, Goetsch, Woodbury and Asoli drug tests and the Sergent and Marañon physical tests. No regular connection could be discovered between them and the mental disease. His findings demonstrate, however, that the Goetsch epinephrin test is not specific for hyperthyroidism.

Ocular Complications of Erythema Nodosum.—Satanowsky summarizes from the literature instances of ocular lesions accompanying skin affections, and especially erythema nodosum. Many of these patients were unmistakably tuberculous, and Foerster accepts a tuberculous origin when no other cause is manifest. One case has been reported with pains in joints and positive Wassermann reaction, in which the erythema nodosum and all the symptoms promptly subsided under mercurial treatment. Other cases have been reported with a similar course and prompt recovery under sodium salicylate. She reports the case of a woman, aged 36, who had been healthy until she developed exophthalmic goiter at 32. It improved materially under systematic thyroid and roentgen treatment. Recently patches of erythema nodosum developed on the legs and a red patch appeared in the left cornea. The connection with the erythema nodosum was evident. The erythema lasted for two and a half months and the episcleritis for a month and a half. Treatment was with twenty daily intravenous injections of about 0.35 gm. of sodium salicylate, although at the time there was nothing to suggest rheumatism.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, **176**, No. 4. L. Heidenhain Number

*Malformation of Intestine. K. Braeunig.—p. 227.
*Roentgen-Ray Treatment of Exophthalmic Goiter. C. Fried.—p. 254.
*Action of Roentgen Rays on Inflammation. C. Kemp.—p. 272.
*Gangrenous Femoral Hernia. A. Becker.—p. 281.

Malformation of the Intestines.—Braeunig's attention was attracted to developmental anomalies in the bowel by a case of invagination of the cecum in the colon down to the sigmoid flexure. Six cases are described, and the embryonal factors discussed.

Roentgen Treatment of Exophthalmic Goiter.—Fried has reexamined regularly every month thirteen patients with exophthalmic goiter since they were apparently cured by roentgen treatment. Both thyroid and thymus had been exposed to the rays, the dose being 80 and 91 per cent. of the erythema dose, with zinc filter. The exposure was repeated after an interval of two to six months. In one case a third exposure was given, and in three only a single exposure was made. The hemoglobin percentage always increased. No drugs were given, but out-door life was considered an essential element in the treatment. The women were all outpatients. Subjective improvement was noted first, but the objective signs soon followed. The exophthalmos seems to have subsided in all but one case; but in nearly all there is still a tendency to vasomotor instability and excitement, so that the patients cannot be regarded as fully recovered.

Roentgen-Ray Treatment of Subacute Inflammatory Processes.—Kemp witnessed the healing under roentgen treatment of circumscribed peritoneal suppurative processes, either of appendicitic origin or consecutive to abortion. Furuncles in the axilla also subsided under roentgen exposures after a small incision. Leg ulcers, long rebellious to other measures, cleared up in forty-eight hours. Pneumonia was also favorably influenced in several cases which seemed to suggest subacute or chronic suppuration. The subjective benefit was always pronounced. The turn for the better was particularly prompt in two cases described in detail. He exposed always a single large field, and warns against cross-fire exposures, for fear of the effect on the general health. He used from 20 to 40 per cent. of the erythema dose.

Treatment of Gangrenous Femoral Hernia.—Becker relates that the interval before operation in 36 cases in the last ten years ranged from one to eight days; one of the patients with the longest interval recovered. Unless the entire incarcerated loop can be drawn through an incision above, it is dangerous to attempt a radical operation if there is the slightest suspicion of infection of the fluid in the hernia. The immediate radical operation was attempted only in 11 of the 36 cases; in 4 a phlegmon developed in the abdominal wall and the patients succumbed to pyemia from thrombosis. The mortality was 26.5 per cent. if 2 moribund cases are excluded; 30.4 per cent. including them. This high death

rate demonstrates anew that practitioners do not call in the surgeon until too late. There need be no mortality if conditions could be corrected within a few hours. Thirteen were saved in the 17 cases in which the gangrenous loop was resected at the hernial opening. In 5 cases the gangrene was sutured-in, with 2 deaths. Both patients recovered in the 2 cases in which the gangrenous loop was brought outside to serve as an artificial anus. The suturing-in method, associated with entero-anastomosis, was possible only with a small hernia or when the gangrene was restricted to the constricting ring. In these circumstances the method proved very valuable.

Klinische Wochenschrift, Berlin

Jan. 8, 1923, **2**, No. 2

Lowering of the Living Standards in Germany. W. His.—p. 53.
German Physicians at the Sickbed of the German People. Dippe.—p. 56.
German Children in Need. Krautwig.—p. 58.
Metabolism of the Food. F. Knoop.—p. 60.
*Histology of Edema. W. Hülse.—p. 63.
*Excretion of Uric Acid in Gout. Thannhauser and Hemke.—p. 65.
*Trophic Function of the Sympathetic. Brüning.—p. 67.
*Blood Changes in Oxygen Breathing. Full and Friedrich.—p. 69.
Phrenicotomy in Pulmonary Tuberculosis. A. V. Frisch.—p. 72.
*Seasons and Weight of the Newly Born. Hellmuth and Wnorowski. —p. 75.
Action of Treatment on Blood Calcium in Spasmophilia. Blühdorn and Thyssen.—p. 78.
Etiology of Impetigo Nephritis. R. Deussing.—p. 79.
Comment on "Functional Thyroid Tests." G. Deusch.—p. 80. Reply. Hellwig.—p. 80.
Proof of Myogenous Stimulus Formation in Vertebrate Hearts. L. Haberlandt.—p. 81.
Casein Autolysis. Ehrenberg and Loewenthal.—p. 81.
Action of Glucose on Vessels. Handovsky and E. Meyer.—p. 82.
Traumatic Argyll Robertson Pupil. R. Botzian.—p. 82.
Surgical Treatment of Congenital Deformities. J. R. Gossmann.—p. 83.
Recent Literature on Creatin-Creatinin Metabolism. Bürger.—p. 87. Conc'n.

Histology of Edema.—Hülse points out that in normal conditions there are no gaps in the tissues. The blood and lymph capillaries are separated by cells and intercellular substance and do not communicate by canals containing "tissue fluid." The exchange of substances does not occur between blood and a free tissue fluid, but between blood and the colloidal system of the living tissue. Such movements of substances are regulated more by the surface tension than by diffusion. The connective tissue is always swollen in the stage of preedema. The endothelium of the capillaries swells before the formation of free fluid in the tissues. The inhibition of resorption which this entails may be the cause of edema. It is probable that the lymph capillaries are affected in a similar way. During the formation of edema, the thoracic duct and the cisterna chyli are almost empty, while they are overfilled during the period of resorption of edemas. Formation of acids may be either the cause or the result of edema.

Excretion of Uric Acid in Gout.—Thannhauser and Hemke do not lay as much stress on the maximal concentration of uric acid as on the comparison of the concentration in the urine with the amount present at the same time in the blood. The relative proportions are changed in constitutional gout.

Trophic Function of Sympathetic Nerves.—Brüning contends that trophic ulcers are due to augmented tonus of the sympathetic nervous system. They develop only some time after the injury, not until a neuroma has formed or pressure from the cicatrix begins to act. Periarterial sympathectomy lowers the tonus also proximal to the field of operation. In a case of injury of the cauda equina, not only the ulcer on the right heel, but also a large bedsore on the right buttock healed after periarterial sympathectomy on the femoral artery. Excessive sympathicotonia leads to degeneration and even necrosis. Reduction of the sympathicotonia is followed by regeneration and even hypertrophy. The way to produce artificially a gastric ulcer would be to augment the sympathicotonia.

Blood Changes in Oxygen Breathing.—Full and von Friedrich found in experiments with breathing of oxygen with a pressure of 10 to 18 cm. of water, that the blood became diluted. At the same time the blood chlorids declined. In some patients with hypertension a marked decrease in the blood pressure occurred.

Weight of the Newly Born and the Seasons.—Hellmuth and Wnorowski show by their extensive material that the differences in the weight of the newly born at different seasons do not exceed the limits required by the theory of statistics.

Medizinische Klinik, Berlin

Jan. 7, 1923, **19**, No. 1

*Puerperal Infection. E. Bumm.—p. 1.
*Postoperative Secretion of Cerebrospinal Fluid. H. Schloffer.—p. 4.
Focal Symptoms with Lesion of Left Parietal Lobe. O. Pötzl.—p. 7.
*Poisoning by Carbon Monoxid. R. Jaksch-Wartenhorst.—p. 11.
Eclampsia.—p. 14. Cont'd.
*Changes of Refraction in Diabetes. A. Elschnig.—p. 17.
*Prevention of Congenital Syphilis. G. A. Wagner.—p. 18.
Connection Between Trauma and Tuberculosis. Flesch-Thebesius.—p. 21. Conc'n No. 2, p. 50.
*Extrapulmonary Infection in Tuberculosis. Ghon and Wertheimer.—p. 26.
Review on Pediatrics. Rietschel.—p. 28.

Chemotherapy and Serotherapy in Puerperal Infection.—Bumm objects to the reports on treatment of puerperal infection that they do not make enough distinction between the different conditions, which have in themselves a very good or very bad prognosis. The determination of prognosis is of course difficult. The almost exclusive presence of bacilli (rods) in the lochia speaks for simple putrefaction of the retained secretions, while streptococci are found almost exclusively in the more virulent infections. Ruge determines the virulence and at the same time the humoral resistance by observation of the growth of the cocci in the serum of the patient. Local antisepsis cannot reach all the germs and may do harm. It should be abandoned. It is quite common that the first chill occurs after irrigating the vagina. The immune serums and general chemotherapy are of use only if applied early. Seventy-six per cent. of the fevers are due to retention of lochia, and heal without specific treatment. The severe cases should be given large doses of antistreptococcus serum, some chemotherapeutic preparations, light baths to increase the temperature of the body, hot applications (no ice), alcohol and ergot. The results are very good (85 per cent. localized) if the treatment begins early.

Secretion of Fluid After Extirpation of Brain Tumor.—Schloffer's patient (large epithelioma of the parietal lobe) had to be treated by lumbar puncture for nine months after the extirpation of the tumor, until she recovered. This shows that the disproportion between the formation and resorption of cerebrospinal fluid may last for a very long time after the cause has been removed.

Poisoning by Carbon Monoxid.—Jaksch-Wartenhorst describes three cases of poisoning by carbon monoxid. All three had very marked cerebral symptoms (spasms, psychic disturbances, Cheyne-Stokes breathing) and one a cerebral hemorrhage two days after the poisoning.

Changes of Refraction in Diabetes.—Elschnig reviews briefly the theories on the origin of sudden myopia or hypermetropia in diabetes. He publishes a case in which one lens had been removed for cataract. The diabetic hypermetropia occurred only in the other eye, which suggests that the lens was responsible for the condition, though there were no clinical signs of a change in the lens.

Prevention of Congenital Syphilis.—Wagner considers the Wassermann reaction as specific only in the first half of pregnancy. The "antenatal" treatment, if instituted early, gives very good results. The previous treatment (before the pregnancy started) is not sufficient. The blood should be tested in every pregnant woman as early as possible.

Primary Extrapulmonary Infection in Tuberculosis of Children.—Ghon and Wertheimer found among 395 necropsies on tuberculous children only six cases with a certain extrapulmonary primary infection (four intestinal, one nose and one middle ear), and three cases in which the primary lesion could not be determined.

Jan. 14, 1923, **19**, No. 2

*Treatment of Diabetes. C. von Noorden.—p. 41.
Congenital and Acquired Syphilis in Children. J. Fabry.—p. 43.
Tuberculin Reaction. H. Gerhartz.—p. 45.
Case of Paratyphoid B. Kraus and Reisinger.—p. 45.
Collective Inquiry on Eclampsia.—p. 47. Cont'n.
Treatment of Exostosis on Heel-Bone. Taendler.—p. 56.

Action of Some Emulsions of Salts. P. Saxl.—p. 57.
Diseases of Bladder. E. Portner.—p. 59.
Recent Literature on Rhinolaryngology. Haenlein.—p. 61.

Treatment of Diabetes.—Von Noorden points to the importance of heredity for the prophylaxis of diabetes. Children of diabetics should avoid sweets and too much protein. The tendency to consult a specialist causes many overlooked cases of diabetes—especially in dermatology and neurology. Almost every diabetes starts as alimentary glycosuria. Alimentary glycosuria is always a sign of real diabetes. The practitioner should leave the determination of carbohydrate tolerance to a specialist, and take the treatment over after two or three weeks, and regulate it according to the advice of the specialist. In beginning coma, no food should be given except 150-200 gm. of brandy in a day. Alkali should be given intravenously or in enemas.

Wiener klinische Wochenschrift, Vienna

Jan. 11, 1923, **36**, No. 2

Treatment of Eclampsia. P. Werner.—p. 21.
*Influence of the Thyroid on Blood Production. G. Holler.—p. 23.
Normal Histology of Stomach. Paschkis and Orator.—p. 26.
Benefit from Vaccine Therapy of Affections of Auditory Nerve. R. Leidler and E. Stransky.—p. 28.
Retroperitoneal Tumors. H. Kunz.—p. 28.
Technic and Indications for Diathermia. R. Grünbaum.—p. 29.
The Campaign Against Tuberculosis. A. Götzl.—p. 30.

The Thyroid and Formation of Erythrocytes.—In patients with hyperthyroidism Holler found that the average diameter of the erythrocytes was at the upper limits of normal or above. While there are only few polychromatophilic erythrocytes to be found with usual methods, vitally stained corpuscles are more frequent than in healthy persons (several tenths of 1 per cent.). The limits of resistance against osmotic influences are broader.

Zeitschrift für klinische Medizin, Berlin

Jan. 27, 1923, **96**, No. 1-3

Heinrich Quincke. G. von Bergmann.—p. 1.
*Motility, Nerves and Pathology of the Bile Ducts. K. Westphal.—p. 22; p. 52; p. 95.
*Etiology of Hypertension. W. Weitz.—p. 151.
*Blood Platelets and Thromboblasts. R. Stahl.—p. 182.
*Heart in Sportsmen. H. Herxheimer.—p. 218.
*Pulse Changes as Heart Function Test. P. Holzer and E. Schilling.—p. 236.
*Proteolytic Ferment in Grippal Pneumonia. O. Abraham.—p. 245.
*Blood Sugar and Alimentary Glycemia in Old People. A. Punschel.—p. 253.

Action of Nerves on the Bile Ducts.—Westphal observed with roentgen rays in many cases of gallstone colic a marked restriction of the movements of the right side of the diaphragm (a visceromotor reflex). An analogous sensory reflex is the sensitiveness of the right phrenic nerve in the neck which was present in many cases (15 among 25), similar to that found by Costa and Troisier in Weil's disease. He found in experiments on animals that the sphincter musculature extending to the duodenal papilla shares also in expulsion of the bile. Its function resembles that of the antrum and sphincter of the pylorus. Slight electric and pharmacologic irritation of the pneumogastric causes a contraction of the gallbladder and peristalsis of the sphincter. Strong irritation causes a general increase of tonus and retention of the bile. Irritation of the sympathetic or paralysis of the pneumogastric decreases tonus and inhibits motility. The evacuation of the bile is inhibited by hyperfunction of the muscles in the duodenal portion, by hypofunction of the muscles of the ducts and bladder, and as a reflex. He believes that the basis of pathologic conditions is a neurosis, which may appear either as an increased motility (for instance, in cholelithiasis of pregnancy), in other cases as a decreased motility. A survey of literature is given.

Etiology of Hypertension.—Weitz made careful investigations among the families of eighty-two persons suffering from hypertension. He found that a larger percentage of the parents had died from apoplexy or heart disease than in other families. Also that death occurred earlier in parents of younger patients than in the parents of older persons with hypertension. In his material, always one parent, at least, suffered from hypertension. Fully 50 per cent. of the brothers or sisters of the patients by the time the age of 55 was reached were suffering from or had died from hypertension. It seems that the condition is inherited as a dominant character. He did not find any indications suggesting exogenous factors like nicotin or alcohol. Such factors and emotions seem to injure the heart and make the existing hypertension more manifest. There was no relation of the general habitus to the disease.

Blood Platelets and Thromboblasts.—Stahl examined the number and morphology of blood platelets in the healthy and 125 sick persons. He emphasizes the importance of platelets with basophilic protoplasm; he considers them as young forms and calls them thromboblasts. Typhoid, Werlhof's disease (hemorrhagic purpura) and the hemorrhagic stage of pernicious anemia are good instances for study of the changes of platelets.

The Heart in Athletes.—Herxheimer examined 171 prominent sportsmen. The heart averaged only a little larger than in other persons. The largest hearts were found in ski skaters. The boxers had smaller hearts than average persons, and relatively the largest right ventricle. The ski skaters had a larger left ventricle.

Pulse Changes as Heart Function Test.—Holzer and Schilling confirmed the prognostic value of the difference between the heart beat and the radial pulse. When both figures become identical under the influence of treatment, the prognosis is good, especially if work does not cause a difference.

Proteolytic Ferment in Sputum and Urine in Influenzal Pneumonia.—Abraham examined the sputum and urine in eleven cases of grippal pneumonia. The proteolytic ferment did not appear in the sputum before the crisis or lysis, and its action corresponded to the number of polymorphonuclears present. The urine did not give parallel results, and even normal urine may contain a proteolytic ferment.

Blood Sugar and Alimentary Glycemia in Old People.—Punschel found that the elderly have a higher glycemia than the young (0.106 per cent. between 58 and 70 years, and 0.110 per cent. between 70 and 91 years, against 0.094 in younger persons). The blood sugar level after ingestion of 20 gm. of glucose is higher in older persons, and remains high longer than in young people. No glycosuria occurred in spite of this.

Zentralblatt für Chirurgie, Leipzig

Jan. 20, 1923, **50**, No. 3

Small Circular Instead of Linear Openings for Drainage of Wounds. Schubert.—p. 82.
*Resection Versus Gastro-Enterostomy. F. v. d. Hütten.—p. 84.
*Experiences with Operations for Goiter. K. Urban.—p. 86.
Nongonorrheal Epididymitis. V. Winkler.—p. 89.
Modified Operation for Hallux Valgus. S. Keszly.—p. 91.
Extra-Articular Means for Ankylosing of Hip Joint. Schmidt.—p. 94.

Resection or Gastro-Enterostomy in Gastric Ulcer.—In recent years, von den Hütten states, radical operative methods in gastric ulcer have been almost universally demanded, but of late he has noted that gastro-enterostomy has again come more into favor. Excision produces in place of the old channel an easily injured scar tissue, in which the blood supply cannot be as good as it was in the original lesser curvature. He has had again and again surprisingly good results from simple posterior gastro-enterostomy without exclusion of the pylorus. He therefore prefers gastro-enterostomy even for hard ulcers and those distant from the pylorus, because he is able to cure by this relatively safe intervention, and does not need to resort to resection with its much higher mortality. The only absolute indication for resection he finds is evidence of malignant disease.

Twenty-Two Years of Goiter Surgery.—Urban surveys his 2,500 goiter operations under local, or regional, anesthesia. The last fifteen years he employed as an anesthetic a 0.5 per cent. solution of procain for adults, with a preparatory injection of 0.01 gm. of morphin, and a 0.25 per cent. solution of procain for children. The normal dosage for adults, was 0.5 gm. He had no serious mishaps with this dosage. The addition of epinephrin caused rather serious hemorrhages and was discarded without lessening the anesthetic effect. He injects the anesthetic quite extensively through the operative

area, and endeavors to instill it into the underlying tissues of the lower pole of the goiter. He gave up deep instillations at the upper pole on account of the danger of blocking the vagus nerve. For children and very nervous patients he combined the local anesthesia with a few whiffs of ether. He used the Kocher so-called collar incision. If thyroid insufficiency was feared, he implanted goiter tissue from young persons, at first in the bone marrow or the spleen, but later, subcutaneously, beneath the mamma. He performed more than 100 such implantations. By these precautions, not a single case of myxedema occurred. He leaves a remnant of the thyroid at the mouth of the inferior thyroid artery, and proceeds very cautiously with the enucleation of the lower pole of the gland, since very often the inferior parathyroid lies embedded here in the loose connective tissue and, in adults especially, can scarcely be distinguished from fat. In every case of strumectomy, for a week at least (and in exophthalmic goiter, for several weeks) after the operation, the patients received only a milk and vegetable diet. This was done by reason of the fact that postoperative tetany is said to occur much less frequently in herbivora than in carnivora. He did not have a single instance of tetany in his whole series of 2,500 cases, whereas Kocher reports 0.5 per cent. tetany in his last thousand cases. The total number of cases ending fatally was 20, a mortality of 0.8 per cent. Cures or nearly complete cures were effected in about 80 per cent. of the 200 cases of exophthalmic goiter. Recurrence of nonmalignant goiter required a second operation in twenty-eight cases. In malignant goiter (sarcoma, carcinoma) no patient survived longer than one year.

Jan. 27, 1923, **50**, No. 4

Modified Operation for Ectopia Vesicae. J. H. Zaaijer.—p. 114.
Early Surgical Treatment in Acute Poliomyelitis. Peiser.—p. 116.
*The Albee Operation in Tuberculous Spondylitis. König.—p. 119.
*Access for Periappendicular Abscess. Lükö.—p. 122.
Extra-Oral Anesthesia of the Mandibular Nerve. Chrapek.—p. 124.
Simplified Drip Irrigation After Prostatectomy. Cordua.—p. 126.
*Double Mask for Ether Narcosis. Jatrou and Wessely.—p. 127.

The Albee Inlay Graft in Pott's Disease.—König reports the results of the Albee operation in forty-six cases of tuberculous spondylitis. He designates 30 per cent. of the cases as failures; in about 70 per cent. of the cases the results of the operation were good, and in some instances extremely favorable.

Lumbar Incision in Periappendicular Abscess.—Lükö recommends the lumbar incision in most cases of periappendicular abscess. The evacuation of pus is complete, and the period of recovery is shortened. The lumbar incision is on the line of the Bergmann-Israel kidney incision, but he begins the incision 4 to 5 cm. lower down. After dividing the musculature and the fascia lumbodorsalis, the palpating finger along the cecum locates the abscess cavity, which is opened by blunt dissection. The lumbar incision is indicated, Lükö holds, in every case when a tympanitic percussion sound is heard over the abscess, and external examination makes it evident that the abscess can be reached from behind. The lumbar operation is contraindicated when palpation shows the abscess adherent to the anterior abdominal wall; also when the abscess inclines toward the true pelvis, as in this event a lumbar incision may injure the ureter.

Double Mask for Ether Narcosis.—The inside mask, which is covered with gauze, has a second much higher mask fitting tightly over it, which is likewise covered with gauze. On the second mask, the gauze is held in place by a metal ring with a spring. At the highest point of the outside mask an opening is made in the gauze, and either a small funnel is introduced to carry the anesthetic to the mask below, or the ether is poured a drop at a time directly on the inside mask. The amount of ether required is thus reduced one half, as the fumes do not evaporate so quickly in the enclosed space. No disagreeable features have been noted.

Casopis Lekaruv Ceskych, Prague

Jan. 13, 1923, **62**, No. 2

*Bacteriophagy in Pyocyaneus Cultures. J. Cancik.—p. 25.
*Treatment of Maxillary Sinus. V. Tesar.—p. 26.
*Tarry Stools in Cholelithiasis. V. Vysin.—p. 30.
*Tuberculosis of Lungs and Pregnancy. V. Müller.—p. 34.
Tubercle of Optic Disk and Choroid Tuberculosis. J. Janku.—p. 38.
Cont'd.

Bacteriophagy in Pyocyaneus Cultures.—Cancik observed in fresh and old cultures of *Bacillus pyocyaneus* two types of colonies: one of them was bluish green and on this silvery spots appeared within forty-eight hours. These spots grew until the place appeared empty. Another type of colonies remained slightly green and seemed to be resistant. The lytic agent did not influence other bacilli.

Treatment of Purulent Inflammations of Maxillary Sinus.—Tesar describes his method of operation.

Tarry Stools in Cholelithiasis.—Vysin describes a case of cholelithiasis after operation with extensive changes and adhesions of the gallbladder. Tarry stools during the attack led to the wrong diagnosis of an ulcer of the duodenum.

Tuberculosis of Lungs and Pregnancy.—Müller observed twenty-two pregnant tuberculous women. He finds that pregnancy has no unfavorable influence on tuberculosis. The use of forceps is advisable. He found in guinea-pigs a favorable influence of pregnancy on experimental tuberculosis.

Hospitalstidende, Copenhagen

Jan. 17, 1923, **66**, No. 3

*Sugar Content of the Blood. K. M. Hansen.—p. 37.
*Agglutinin Tests in Icelanders. S. Jonsson.—p. 45.

The Sugar Content in Arterial and in Venous Blood.—The charts from four persons show a rise in the sugar content of venous blood and blood from the ear after ingestion of 60 gm. of glucose. The curves diverge widely in normal subjects. Hansen tries to explain why, on the other hand, the two curves tend to run parallel in patients with polyarthritis and diabetes.

Agglutinins in the Blood of Icelanders.—Jonsson examined the blood for iso-agglutinins in 800 subjects at Reikjavik; neither age, complexion, health or sickness, or region seemed to have any influence.

Jan. 24, 1923, **66**, No. 4

*Roentgen Localization of Brain Tumors. A. Wimmer.—p. 53.
*The Heart After Severe Physical Training. K. Secher.—p. 61.

Roentgen Localization of Brain Tumors.—The partly ossified brain tumor in Wimmer's case gave a clear roentgenogram, allowing a permanent cure by its safe removal. His patient was a woman, aged 42, with hemiplegia of gradual onset three months before.

Size of Heart After Cessation of Active Physical Training.—Secher tabulates the findings from twenty-two animals. His experiments confirm anew the remarkable power of adaptation of the heart to extra work and to return to normal conditions.

Jan. 31, 1923, **66**, No. 5

*Wassermann Test in the Tuberculous. H. Boas and C. With.—p. 69.
*Decline in Weight of Heart After Epinephrin. K. Secher.—p. 90.
*Total Acidity in Stomach. R. Ege.—p. 94. Conc'n No. 6, p. 101.

The Wassermann Reaction in the Tuberculous.—A positive reaction was obtained only in three of 1,343 cases of tuberculous skin affections. The response was always negative in 758 cases of surgical tuberculosis, and in 376 of pulmonary tuberculosis. The research was done at the official Serum Institute for Denmark.

Subsidence of Heart Weight After Injection of Epinephrin.—Secher has reported recently that hearts enlarged by physical training subside to normal again when the extra work is suspended. He here presents similar evidence of the adaptation of the heart to a transient chemical influence and its recovery thereafter. Rats were the animals used in these experiments.

Determination of Total Gastric Acidity.—Ege explains that the simplest method is to titrate the aspirated contents to the original reaction of the test meal. The best indicator for this with the Ewald test meal is the "brom-cresol-purple reagent." The figure thus obtained is a relative measure of the acid secreted by the stomach. He comments on the causes of error when phenolphthalein or other indicator is used.